DOCUMENT RESUME

ED 147 480 CE 013 248

TITLE	Training Materials Sourcebook. Motor-Vehicle Mechanics and Repairmen (8581). Voc./Tec. Resources Series. Number 1.
INSTITUTION	Department of Manpower and Immigration, Ottawa (Ontario).
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DESCRIPTORS	*Annotated Bibliographies; *Audiovisual Aids; Auto Body Repairmen; *Auto Mechanics; *Auto Mechanics (Occupation); Engines; Fundamental Concepts; Mechanics (Process); Motor Vehicles; Power Mechanics; *Resource Materials; Skilled Occupations; Trade and Industrial Education
IDENTIFIERS	Canada

ABSTRACT

First of a new resource series, this annotated bibliography presents approximately four hundred training curriculums and instructional materials for motor vehicle mechanics and repairmen. The materials are divided into seven major categories: shop practice; general theory; engine and related systems; electrical and auxiliary systems; chassis; auto body repair and paint; and specific model maintenance and related careers. Each category includes entries of two types: print materials, arranged alphabetically, which include such materials as textbooks, instructor's manuals, and student workbooks, and audiovisual materials which include films, records, slide sets, and transparencies. Each entry includes some or all of the following: title, source/publisher, number of pages, author(s), date, material(s) included, price, and annotations. A concluding chapter provides references to such items as catalogues, trade journals, training courses, and trade associations. A publishers index and ordering information are appended. (BL)

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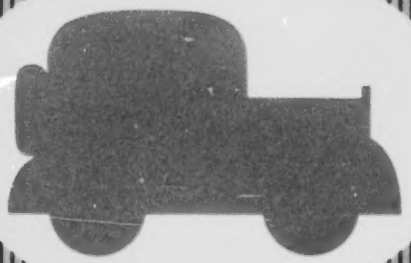

Training Materials Sourcebook

Motor-Vehicle Mechanics and Repairmen (8581)

Répertoire des matériaux didactiques

Mécaniciens et réparateurs de véhicules automobiles (8581)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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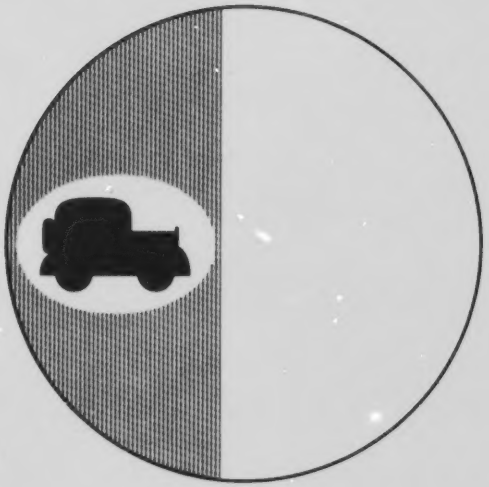
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND THE ERIC SYSTEM CONTRACTORS."

Voc./Tec. Resources Series Number 1

Série Ressources en formation professionnelle Numéro 1

Manpower and Immigration

Main-d'œuvre et Immigration



Training Materials Sourcebook

Motor-Vehicle Mechanics and Repairmen (8581)

Manpower and Immigration

Bud Cullen
Minister

Répertoire des matériaux didactiques

Mécaniciens et réparateurs de véhicules automobiles (8581)

Main-d'œuvre et Immigration

Bud Cullen
Ministre

TABLE OF CONTENTS

INTRODUCTION

CHAPTER		Page
I.	Shop Practice	3
II.	General Theory	13
III.	Engine and Related Systems	43
IV.	Electrical and Auxiliary Systems	81
V.	Chassis	105
VI.	Auto Body Repair and Paint	135
VII.	Specific Model Maintenance and Related Careers	149
VIII.	Further Resources	167
IX.	Publishers Index and Ordering Information	187

TABLE DES MATIÈRES

INTRODUCTION

CHAPITRE		Page
I.	Technique d'atelier	3
II.	Théorie générale	13
III.	Moteur et systèmes connexes	43
IV.	Systèmes électriques et auxiliaires	81
V.	Châssis	105
VI.	Carrosserie et peinture	135
VII.	Entretien de modèles particuliers et carrières connexes	149
VIII.	Autres ressources	167
IX.	Éditeurs et informations sur les commandes de livres	187

INTRODUCTION

Training Materials Source Book: Motor-Vehicle Mechanics and Repairmen is the first publication in a new series entitled Technical-Vocational Resources Series. The objective of the series is to provide detailed information on training curriculum and instructional materials especially in the vocational-occupational areas. Other publications planned for this series will include welding, heating/refrigeration/air conditioning, carpentry and plumbing. The Series has been designed to assist instructors and administrators select and obtain relevant training materials in their speciality area. The materials were selected from the publications of over 400 publishers, and although the bibliography is not exhaustive, it is selective and comprehensive.

In addition to an annotation, each item includes the title of the material, its producer, its format and acquisition information.

The materials, which are arranged alphabetically, are divided into seven major categories, with each category having a print and audio-visual section. The print section includes such documents as general textbooks, instructors' manuals and student workbooks; and the audio-visual section includes films, records, slide sets and transparencies.

The "Further Resources" chapter provides references to such items as catalogues, trade journals, training courses, and trade associations.

INTRODUCTION

Répertoire des matériaux didactiques: Mécaniciens et réparateurs de véhicules automobiles est le premier ouvrage de la nouvelle série, Série ressources en formation professionnelle, que nous lançons à titre expérimental. Elle vise à fournir des informations détaillées sur les programmes et le matériel de formation, notamment dans les secteurs professionnels. Nous projetons de publier dans cette série d'autres documents sur les sujets suivants: soudure, chauffage - réfrigération-climatisation, charpenterie et plomberie. La série aidera les moniteurs et les administrateurs à choisir et à obtenir le matériel de formation qui convient pour leur domaine de spécialisation. Le matériel a été choisi parmi les publications de plus de 400 éditeurs et, bien que notre bibliographie n'épuise pas le sujet, elle est sélective et très vaste.

En plus d'expliquer chaque document qu'il présente, ce livre indique le titre, l'éditeur et la présentation de chacun ainsi que la façon de se le procurer.

Les documents sont disposés par ordre alphabétique et classés en sept grandes catégories comprenant chacune une partie réservée aux imprimés et l'autre au matériel audio-visuel. La première partie présente des manuels généraux, des guides du moniteur, des cahiers de travaux pratiques et autres documents connexes tandis que la seconde énumère des films, des disques, des ensembles de diapositives et des transparents.

Le chapitre intitulé "Further Resources" renvoie le lecteur à des sources telles que catalogues, associations, revues professionnelles et cours de formation.

The final chapter provides publishers names and addresses and ordering information.

The back page includes a list of publications available, or being printed.

We hope you will find this publication useful and would appreciate any suggestions, comments or queries that you may have. They should be addressed to:

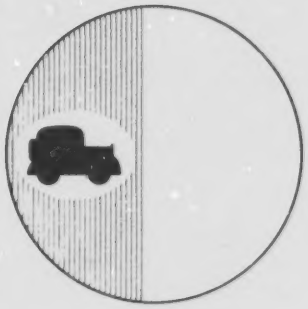
V.R. Blake
Programs Analysis and Development Group
Manpower Training Branch
Department of Manpower and Immigration
OTTAWA, Ontario.
K1A 0J5

Le dernier chapitre donne le nom et l'adresse des éditeurs ainsi que des renseignements sur la façon de commander le matériel.

La page arrière énumère les publications existantes ou en voie d'impression.

Espérant que ces données vous seront utiles, nous vous saurions gré d'envoyer à l'adresse suivante toute proposition, observation ou demande de renseignements que vous aimeriez formuler:

Monsieur V.R. Blake
Groupe de l'analyse et du perfectionnement des programmes
Direction générale de la formation de la main-d'oeuvre
Ministère de la Main-d'oeuvre et de l'Immigration
OTTAWA (Ontario)
K1A 0J5



SHOP PRACTICE

TECHNIQUE D'ATELIER

TOOLS

Automotive Service & Repair Tools

HARRY G. HILL, 1975. SOFTCOVER 288PP.
VAN NOSTRAND REINHOLD
(1035-8).....$9.20
INSTRUCTOR'S GUIDE
(1036-6).....$1.90

Each unit is abundantly illustrated with up-to-date photographs and describes in detail the particular tool, which tool to select for a particular job, and how to use the tool. Safety hints and special hints are highlighted to help the student complete every job safely and efficiently. CONTENTS: General Hand Tools; Wrenches; Sockets and Drivers; Threading Tools; Pipe and Tubing and Accessories; Special Purpose Tools; Miscellaneous Tools; Index.

* * * *

Automotive Shop Practices

STUDENT REFERENCE BOOK, FORD
(0702-001).....$3.25

Describes common hand tools, drilling & threading tools, electrical tools and general safety precautions.

TOOLS

Screwdrivers; Hammers and Pliers; Wrenches; Bench Vises; Punches and Drifts; Arbor Presses; Chisels; Files; Hand Taps; Electric Drills & Twist Drills; Oilstones; Abrasives; Grinding Wheels; Stud Removers; Reamers; Burnishers; Hardening; Tempering; Identifying Metals.

* * * *

Tool Maintenance

DAN IRVIN, BRODHEAD-GARRETT
(350486).....$10.50

This book explains how to take care of power tools.

* * * *

Fel-Pro Gasket Installation Manual

39PP. FEL-PRO INC.

* * * *

Fasteners

72PP. 178 ILLUS. TWO COLORS, 8½ X 11, SOFTCOVER, JOHN DEERE
.....$3.25
10 OR MORE.....$2.45 EA.
(ORDER FOS-60B)

CONTENTS: Uses & Types of Fasteners; Bolts; Screws; Nuts; Removing and Restoring Bolts and Nuts; Locking Methods for Nuts; Torque and Tension; Machine Screws; Studs, Keys, Pins; Plastic Fasteners; Specialty Fasteners; Metric Conversion Charts.

* * * *

Bearings and Seals

86 PP. 136 ILLUS. TWO COLORS, 8½ X 11, SOFTCOVER, JOHN DEERE
.....$3.25
10 OR MORE.....$2.45

Tnis book covers all types of bearings and seals. It is fully illustrated. It explains bearing loads, friction, "crush" and other concepts. It tells the complete maintenance story on bearings - cleaning, lubrication, adjustment and repair. The book explains the uses of gaskets, oil seals, sealing rings and others. Tells how to care for seals - static and dynamic types.
CONTENTS: Basic Theory; Types; Bushings; Ball Bearings; Roller and Needle Bearings; Maintenance and repair; Diagnosing Failures; Seals; Gaskets; Failures and Repair.

* * * *

Automotive Tool & Equipment Planning and Buying Guide

A.S.I.A. PUBLICATIONS
(505).....$2.00

A guide to assist repair shops, service stations, vocational schools and jobber machine shops in the selection and application of basic machine tools, mechanic's tools, supplies, materials, and furniture.

* * * *

Automotive Tools and Test Equipment

PETERSEN AUTOMOTIVE BOOKS
(6-BOOK LIBRARY) MAFEX
(345300).....$18.65

A set of 6 "show'n tell" manuals combine detailed line-art illustrations, photos, and simplified non-technical text making the most complex auto systems and procedures easy to understand.
The six books cover: Auto Trouble Shooting Guide; Motorcycle Trouble Shooting Guide; Motorcycle Repair Manual; Basic Auto Tools and How to Use Them; Auto Measuring Tools; Tune-up & Test Equipment.

* * * *

Petersen Action Library

GENERAL PUBLISHING
BASIC AUTOMOTIVE HAND TOOLS AND HOW TO USE THEM
(2643 549).....$4.50
BASIC AUTOMOTIVE TUNE-UP AND TEST EQUIPMENT
(2953 555).....$3.50
BASIC AUTOMOTIVE MEASURING TOOLS
(2956 556).....$4.50

BASIC AUTOMOTIVE TROUBLESHOOTING
(2956 553).....$3.50
BASIC AUTO REPAIR MANUAL NO. 7
(2398 643).....$4.50

* * * *

Shop Tools

36PP. 84 ILLUS. TWO COLORS, 8½ X 11 INCH WITH SOFT COVER. JOHN DEERE
FOS SINGLE COPY.....$2.35
10 OR MORE.....$1.75

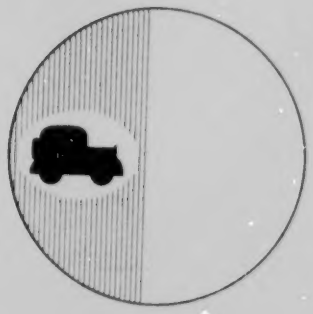
This book shows basic use of hand tools. It gives shortcuts and safety rules for performing shop work. It tells how to use special tools, such as torque wrenches and micrometers. It includes handy table of frequently used weights and measures.
CONTENTS: Screwdrivers; Hammers; Pliers; Wrenches; Torque Wrenches; Chisels; Punches; Files; Hacksaws; Vises; Soldering Equipment; Clamps; Twist Drills; Feeler Gauges; Micrometers; Gauges and Testers; Safety Rules; Weights and Measures.

* * * *

Workbook for Automotive Tools

THIRD EDITION, WM. H. CROUSE, 1971, 128 PP.
MCGRAW-HILL
(14623-3).....$4.40

Correlates with all books in Crouse series. Measuring, fastening devices and methods, hand tools, cutting tools, shop work and safety are covered.
CONTENTS: Shop Work & Safety: Rules, Calipers & Micrometers; Dial Indicators; Gauges; Assembling & Fastening Devices; Rivets and Pins; Soldering;



SHOP PRACTICE

TECHNIQUE D'ATELIER

SAFETY

Automotive Safety Inspection

FILM STRIP PROGRAM. MAFEX ASSOCIATES
6 COLOR FILMSTRIPS 10 STUDENT MANUALS
6 CASSETTES WITH AUDIBLE ADVANCE
1 INSTRUCTION MANUAL

This program is designed to give your students marketable skill as an automotive repair mechanic. The content of this program is based on the Official Pennsylvania Program for Certification of Inspection Mechanics and Inspection Areas. This six-part color sound filmstrip program instructs the student or employee step-by-step on how to develop an efficient pattern for inspection.

* * * *

General Automotive Shop

2 MODULES (32-2101) HOFFMAN

	FRAMES	TIME
2.1 ENGINE REPAIR SHOP SAFETY	93	18:30
2.8 CASH CONTROL DOCUMENTS	39	11:24

TOTAL: NO. FRAMES 132/TIME 29:54

Proper safety procedures for in-shop activities. Use of cash control documents involving repair orders, parts counter tickets and other types of paper work.

* * * *

General Shop Safety

FILMSTRIP. LIBRARY FILMSTRIP CENTER
COLOR-SOUND FILMSTRIP: 51 FRAMES, TIME: 13:04 MIN.
LEVEL: SECONDARY, COLLEGE, ADULT, VOCATIONAL.
(LC NO. 70 740695)

This filmstrip introduces students to safe shop practices. It deals with such things as proper housekeeping, fire prevention measures, color codes, care & handling of chemical & plastic materials, as well as personal protection through use of eye glasses, safety shoes, and protective masks and clothing. Visual examples are presented with color photographs of correct situations and cartoon sequences when applicable.

* * * *

Safety Training for Occupational Programs

COLOR FILMSTRIP/CASSETTE PROGRAMS (AUDIBLE & INAUDIBLE ADVANCE SIGNALS). THE 2000 COMPANY
1A1-NC INTRODUCTION TO AUTO SHOP SAFETY 1976..$42.00
1AE-L1 GRINDER, BUFFER, DRILL PRESS AND HAND DRILL SAFETY 1976.....$28.00

Includes tests which co-ordinate with review section of filmstrips. Programs include review sections which synchronously "break" for tests.

* * * *

Shop Safety

COLOR FILMSTRIP (49 FRAMES), AUDIO-CASSETTE, WORKSHEETS. OMG BOOKSOURCE
(TA-2A).....$22.00

An excellent lesson for preparing students for safety tests. Program covers safety in use of

SAFETY

hydraulic jacks and jackstands, bumper, twin-post hoists, air hoses, steam cleaners, engine hoists, electric drill motors, battery charging, face shields, test equipment, fire extinguishers, and electric stand grinders.

* * * *

FASTENERS

SLIDE SET. JOHN DEERE
COMPLETE SET.....$47.15
(ORDER FOS-60 SLIDES)

Matching 35 mm. color slide set available to aid learning in classroom or study carrel. Set has 130 color slides in standard 2 x 2 inch frames. For use in classroom with "Fasteners".

* * * *

TOOLS & FUNDAMENTALS TERMINOLOGY

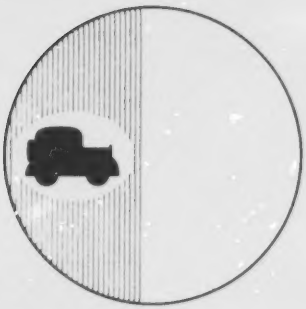
9 MODULES (32-1701) HOFFMAN

		FRAMES	TIME
2.2A	HYDRAULIC PRINCIPLES	32	7:40
2.2B	HYDRAULIC APPLICATIONS	15	2:20
2.3	INFORMATION LOCATION	29	7:08
2.4A	SPECIAL TOOLS	45	10:10
2.4B	FASTENERS	39	9:50
2.4D	HAND TOOLS	39	11:00
2.5	TERMINOLOGY & NOMEN-CLATURE	34	6:50
3.1	PRINCIPLES OF FRAME CONSTRUCTION	30	6:00
3.5	FRONT END GEOMETRY	29	9:00

TOTAL: NO. FRAMES 292/TIME 1 HR. 9:58 MIN.

Hydraulic theory, Pascal's law, basic tools, procedures; nomenclature and front end geometry are combined to expose the trainee to general fundamentals of the course.

* * * *



GENERAL THEORY

THÉORIE GÉNÉRALE

FUNDAMENTALS

THE AUTO BOOK

WM. H. CROUSE. 1974. 662PP. MCGRAW-HILL RYERSON

(14551-2).....	$11.00
AUTO STUDY GUIDE	
(14554-7)	$ 5.50
AUTO SHOP WORKBOOK	
(14552-0)	$ 5.20
AUTO TEST BOOKLET	
(14553-9)	$ 4.15
15 AUDIO CASSETTES	
(87685-1)	$148.50 NET
INSTRUCTOR'S MANUAL AND KEY	
(14555-5)	$ 3.85

Offers a comprehensive, easy-to-understand introduction to the automobile and to automotive mechanics. Written at a low level for students with reading difficulties, it covers theory of operation, construction, troubleshooting, servicing and repair.
CONTENTS: Auto Shop Fundamentals; Auto Engine Fundamentals; Auto Electric Systems; Auto Engine Service; Rotary Engines; Auto Transmission and Power Trains; Auto Chassis and Body Service; Auto Air Conditioning Systems.

FUNDAMENTALS

Auto Mechanics

HERBERT ELLINGER,
WESTERN MICHIGAN UNIVERSITY
545PP., 1972, PRENTICE- HALL

(013-055152-X).....$13.50

Bridges the gap between the too elementary and the excessively engineering-oriented books. Discusses principles and procedures rather than a particular piece of equipment or automotive part. Describes operational requirements, typical design features and service procedures of the automobile's mechanical parts. Designed to be used along with shop or laboratory work. Presents material, wherever possible, in the same order in which it would be encountered in the hands-on work. Provides illustrations (769, mostly original) selected to show the required information while minimizing the automobile part make and model to reduce the possibility of rapid outdating. Instructor's Manual Available.
CONTENTS: Introduction to the Automobile; Automobile Engine Operation; Intake and Exhaust Manifolds; Cylinder Head and Valve Train; Piston, Ring and Rod Assemblies; Shafts, Bearings and Oil Seals; Engine Block and Gaskets; Cooling System Operation; Engine Lubricants and Systems; Engine Service Procedures; Mechanical Characteristics; Normal and abnormal Combustion; Automotive Engine Carburetors; Electricity and Batteries; Starters and Starting Systems; Charging Systems and Regulation; Ignition Systems Operation; Automotive Engine Testing; Control of Automotive Emissions; Automotive Clutch Operation; Standard Transmission Automatic Transmissions; Propeller Shaft and Rear Axle; Automotive Brake Systems; Tire Design and Operation; Vehicle Handling and Suspension; Steering and Wheel Alignment; Steering Gears and Columns; Instruments and Accessories; Automotive Air Conditioning.

* * * *

Auto Mechanics Fundamentals

2/E. M.W. STOCKEL. 1975.480PP. GENERAL PUBLISHING
GW .....E$12.50
SCHOOL PRICE $10.00

This text provides an excellent introduction for beginners. Recently revised, it now contains metric conversion tables plus a second colour. Each unit is approached by starting at the elementary level and covering only the basic parts. As the explanation unfolds, related parts are added until the student has studied and "mentally" assembled the entire unit. Math, physics, hydraulics, safety, etc., are covered in the text, where they apply.

* * * *

Automobile Construction and Operation

CHARLES STAHN. 1965. 241 PAGES. MCGRAW-HILL
(77003013-0) $6.95

This book starts with the fundamental facts about cars and progresses to a more complete knowledge of the construction and operation of the various components of cars. Service procedures have purposely been omitted, although a few general procedures are given. Technical terms have been carefully used to explain clearly and accurately the various assemblies.
CONTENTS: Introduction; The Running Gear; Power Plant; Engine Lubrication System; Engine Fuel System; The Exhaust System; The Cooling System;

(Automobile Construction & Operation Cont'd)

The Ignition System; The Power Transmission System; The Transmission; Universal Joints and Drive Shafts; Rear Axle Assembly; Tools; Fastenings; Bearings; Sealing Devices; Tubes; Hoses and Fittings;

* * * *

AUTOMOBILE CONSTRUCTION AND OPERATION

THIRD EDITION (S1 UNITS). CHARLES STAHN. 1976. MCGRAW-HILL RYERSON

The third revision of AUTOMOBILE CONSTRUCTION AND OPERATION is fully S1 in line with the changing industry. It also incorporates new sections on brakes, including disc, drum, and power brakes. New sections on rotary and turbine engines, emission control, electricity, magnetism, batteries, charging and cranking systems have also been added as well as many new illustrations and end-of-unit questions.
CONTENTS: Introduction; The Running Gear; Springs; Shock Absorbers; Frame Wheel Suspension; Steering Systems; Wheel Alignment; Braking Systems; Power Plant; Engine Lubricating Systems; Engine Fuel Systems; Emission Systems; The Cooling System; Ignition System; Fundamentals of Electric Circuits & Magnetism; The Battery; Charging Systems; Cranking Systems; Lights; Switches and Fuses; Power Transmission System; The Transmission; Universal Joints and Drive Shafts; Rear Axle Assembly; Tools; Fastenings; Bearings; Sealing Devices; Tubes; Hoses and Fittings.

* * * *

AUTOMOBILE MECHANIC

SECOND EDITION, 1970. 193PP. INDUSTRIAL EDUCATION
STUDY GUIDE AND UNIT TESTS $6.00
COORDINATOR'S GUIDE $4.00
ADDITIONAL TESTS & WORK SHEETS $2.00

This guide covers careers for automobile mechanics; tools; safety; engine principles; ignition systems; cooling systems; lubricating systems; fuel systems; clutches; transmissions; suspension systems; brake systems; electrical systems and air tools; the a/c cycle; a/c fundamentals; testing; troubleshooting; charging the system and a glossary.

* * * *

AUTOMOBILE-TRUCK MECHANIC

1971. NATIONAL LABORATORY FOR THE ADVANCEMENT OF EDUCATION

	MICROFICHE	HARD COPY
AUTOMOBILE/ TRUCK MECHANIC...	$77.20	$194.70

INSTRUCTIONAL SYSTEMS-MASTERS ON MICROFICHE OR HARD COPY. Career education systems developed & used by the U.S. Air Force. Selected & masters made with support of the Air Force, U.S. Office of Education & Aerospace Education Foundation. Available for cost of reproduction & handling sets of high resolution microfiche from which unlimited copies can be reproduced. For an additional cost, the same materials can also be purchased in hard copy. Note the two prices listed below for each course; the first for the microfiche version, the second for the hard copy version.
Package contains all printed material, including texts, workbooks and programmed units utilized in each system (microfiche or hard copy).

(Automobile Truck Mechanic Cont'd)

A Plan of Instruction shows the learning objectives for each module with support materials & instructional methodology keyed to the objectives. Also on microfiche or in hard copy are Lesson Plans & Scripts for each lesson unit. Further, a summary of key elements of the system including a list of equipment essential to the course, and an audio-visual "Materials Available Summary" listing titles, prices & sources of all still and motion visuals are also available in hard copy only. Request free copy of course outline.
COURSE DESCRIPTION: Includes gasoline engine tuneup & repair; manual & automatic transmission replacement & adjustment; lubrication system servicing & repair; cooling system servicing; power train repair; front-end & steering system adjustment & repair; brake system adjustment & repair; warning & lighting system repair; & hydraulic control repair. For demonstration purposes, a variety of engines are utilized in this course. For student hands-on activities, one typical 6 or 8 cylinder engine for every two students is advised. Course requires a complete auto workshop & associated equipment for all practical work. Seven study modules, total 295 study hours.

* * * *

AUTOMOTIVE ENCYCLOPEDIA
TOBOLDT, W.K. AND JOHNSON, L. 1975.784PP.ILLUS.
GENERAL PUBLISHING
.....E$14.75
SCHOOL PRICE $11.80

This encyclopedia describes in simple non-technical language, and shows by clear illustrations, how parts work, etc., and what is required to get top performance in Power, Speed, Economy, and Safety. Supplies tune-up and mechanical specifications for all late model U.S. cars.

* * * *

AUTOMOTIVE ESSENTIALS
RAY F. KUNS. BRODHEAD-GARRETT
(350782).....$5.75

A definite plan of instruction for preparing students to select, operate, and repair automobiles intelligently.

* * * *

AUTOMOTIVE FUNDAMENTALS
FRED NASH. 1969. 199PP. MCGRAW-HILL
(92529).....$7.25

With this text, you can offer your beginning students an updated and comprehensive basic automotive mechanics course. The text material includes complete information on power brakes and steering. There is a great variety in end-of-chapter questions and practical student assignments.
CONTENTS: Introduction and History; Chassis; Shop Practice; Running Gear Brake System; The Engine; The Cooling System; Lubricating System; Electrical System; Drive Line.

* * * *

AUTOMOTIVE FUNDAMENTALS
3/E. VENK, E.A. AND BILLIET, W.E.1972. 566PP.ILLUS.
GENERAL PUBLISHING
.....E$10.95
STUDY GUIDE .....E$ 3.50

FUNDAMENTALS

STUDY GUIDE.....$3.50

* * * *

AUTOMOTIVE FUNDAMENTALS

E.A. VENK AND W.E. BILLIET. 520PP. 580 ILLUS.
BRODHEAD-GARRETT
(350822).....$9.00
(350833) STUDY GUIDE.....$3.00

The How and Why of the Automobile.

* * * *

AUTOMOTIVE MECHANICS

7TH EDITION. WILLIAM H. CROUSE. 1975. 640PP.
MCGRAW-HILL
(14535-0).....$14.25
(14538-5) WORKBOOK.....$ 4.95
(14539-3) STUDY GUIDE.....$ 3.85
(14537-7) TEST BOOKLET.....$ 1.75

This new edition is a complete course covering the theory of operation, construction, maintenance, troubleshooting, adjustments, repair and rebuilding of all automotive components. New material on safety, the Wankel engine, automotive emission controls, catalytic converters, air bags, energy absorbing bumper systems, overhead cams, electronic ignitions, and belted-radial tires has been added. Ancillary materials are also included.

* * * *

AUTOMOTIVE MECHANICS

1975. CHRONICLE GUIDANCE PUBLICATIONS
(45)..... .50

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AUTOMOTIVE MECHANICS AND TECHNOLOGY

TILLMAN, STECKNER. MACNILLAN OF CANADA
(0-7705-1195-3).....$8.95

A completely revised edition of AUTOMOTIVE MECHANICS: PRINCIPLES and OPERATIONS by Mervin J. McGuffin. Incorporates all recent trends and developments. Complete introduction to principles and operation of internal combustion engines, the automobile, and the hand tools used to service.

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AUTOMOTIVE SCIENCE

LOUISE E. JENSEN, WM. A. BRAZIER, H.G. HILL.
1976. VAN NOSTRAND REINHOLD
(1302-0).....$4.85
(1303-9)INSTRUCTOR'S GUIDE.....$1.90

Basic science principles are discussed in this revised test-workbook. Each of the 31 units begins with behavioral objectives stated in measurable terms and concludes with questions applicable to today's automobiles. New units include: Air Conditioning as well as Internal Combustion Engines with Air Pollution and Rotary Engines. Electricity and Magnetism data conforms to the electron theory of current flow and magnetism.

FUNDAMENTALS

CONTENTS: Science, Matter, Measurement; Mechanics and Machines; Magnetism and Electrical Energy; Heat and Light Energy.

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AUTOMOTIVE TECHNOLOGY

FREDERICK C. NASH & KALMAN BANITZ. 1973.586PP. ILLUS. MCGRAW-HILL
(92751-0) $16.95

Extensively illustrated with photographs and line drawings, this text enables students to understand and appreciate the construction, operation, theory, and, to some extent, the basic servicing of motor vehicle components. The book has been divided into six major units, each of which contains theory, construction, and fundamental principles and could be used individually as the basis for a single option program. Other important features include an emphasis on the universality of components and systems in connection with the standardization of automobile construction, a detailed section on electrical and electronic systems, a discussion of modern safety and pollution control devices, and a complete series of composition-type questions accompany each chapter.
CONTENTS: Introduction; Shop Practice; Frame and Suspension Systems; Suspension-System Service; Steering Systems; Alignment and Wheel Balance; Steering-System Service; Wheels, Hubs, and Tires; Tire Service; Physical Properties of Brakes; The Brake System; Brake Service; The Clutch; Clutch Service; Transmission Principles; Standard Transmissions and Over Drives; Standard Transmission and Overdrive Service; Torque Converters and Fluid Couplings;

Automatic Transmissions; Automatic-Transmission Service; Drive Shafts; Differentials; Differential Service; Rear Axles; Principles of Engine Operation; Engine Definitions; Measurements and Performance; Types of Engines; Valves and Valve-Train Const; Valve and Valve-Train Service; Cylinder Blocks; Crankshafts and Bearings; Cylinder Block; Crankshaft and Bearing Service; Connecting Rods; Pistons and Piston-Rings; The Cooling System; Principles, Construction and Service; The Lubrication System; Fuels; The Fuel System; Fuel-System Service; Electrical Fundamentals; The Battery and Battery-Service; The Ignition System; Ignition-System Service; The Starting Circuit; Starting System Service; The DC Charging circuit; DCCharging-Circuit Service. The AC Charging Circuit; AC Charging-Circuit Service; Wiring; Lights; Instruments and Accessory Circuits; Test Equipment & Engine Tune-Up; Index.

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AUTO SERVICE AND REPAIR

MARTIN W. STOCKEL. 800PP. OVER 2100 ILLUS. BRODHEAD-GARRETT
(350877).....$12.64

Helps students learn to properly service, diagnose trouble, and repair modern automobiles. Teaches essential skills. Tells and shows how to locate trouble, and to provide needed service and/or repair.

This book offered by Goodheart-Wilcox ... $9.48

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MOTOR SERVICE,S AUTOMOTIVE ENCYCLOPEDIA

W.K. TOLBOLDT & LARRY JOHNSON. 752PP. OVER 1800

FUNDAMENTALS

ILLUS. BRODHEAD GARRETT

(350888).....$12.64

Provides instruction in fundamentals and basic service procedures. Complete auto mechanics text in one easy-to-understand volume. Supplies mechanical and tune-up specs for domestic and foreign cars.

This book offered by Goodheart-Wilcox ...$9.48

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AUTO MECHANICS FUNDAMENTALS

MARTIN W. STOCKEL. 480PP. 1291 ILLUS.
BRODHEAD-GARRETT
(350899) $10.64

For use in teaching auto Fundamentals to beginning students. Each automotive unit starts with basic theory and as explanation unfolds, parts are added until unit is complete.

This book offered by Goodheart-Wilcox ...$7.98

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THE ENGINE

H. HARGREAVES. 256PP. 238FR. TECH. SCH. 75P
ST. LAWRENCE HOUSE, 29 BROAD ST. BRISTOL, ENG.

Tools & Uses; Spanner sizes; bolts & threads; 4 stroke engine cycles & principles; crankshaft; pistons; flywheel; camshaft; valve gear; springs; operating cams; parts; timine; overlap; tappet adjustment.

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COMPLETE GUIDE FOR EASY CAR CARE

D.A.LEIN & W.E. ENGLISH. 388PP. PRENTICE-HALL INC.
.....$10.95

This book describes automotive functions in easy to understand terms and explains what maintenance procedures can be undertaken by the automobile owner and which are best left to the experts. It covers everything from the engine components to interior and exterior finishes.

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EASI-GUIDE TO YOUR AUTOMOBILE

A.C. SIMMONDS
(SBN: 0-672-20938-1) $4.40

The author uses an informal style and non-technical language to explain how a car works, what to do when it doesn't work properly, and how to make driving more pleasant. Even the most inexperienced person will be able to make small repairs and perform routine maintenance measures. Over two hundred photographs are included.

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ESSENTIALS OF AUTO MECHANICS

MAFEX ASSOCIATES
(446300) CLASS SET $79.95
INCLUDES: 10 ESSENTIALS OF AUTO MECHANICS (HANDBOOK)
10 STUDY GUIDES, 1 GUIDEBOOK
1 WORDS TO KNOW, 1 UNIT TESTS
1 TEACHER'S GUIDE
(446400) EXTRA HANDBOOKS $4.50
(446500) EXTRA STUDY GUIDES $3.50

FUNDAMENTALS

Besides teaching basic reading skills, this 6-book program teaches basic auto mechanics. Easy to read and understand, even students with 3rd or 4th grade reading abilities can read and understand the book.
CONTENTS: ESSENTIALS OF AUTO MECHANICS. An illustrated handbook which offers the most important basic information about auto mechanics in a easy to understand form.
WORDS TO KNOW. For use by any student needing help with understanding the hand book -- in dictionary form.
STUDY GUIDE. Helps students understand and remember the information.
UNIT TESTS. Section tests on the handbook and study guide with charts for students to keep track of their progress.
GUIDEBOOK FOR WORK DISCOVERIES. For use by teacher to word recognition skills through auto mechanics. Perfect for reading teachers.
TEACHER'S GUIDE. Directions, purposes, activities.

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FORD REGISTERED TECHNICIAN SERIES - AUTO MECHANICS

WHEEL ALIGNMENT AND BALANCE
1970. ILLUS. 121 PP. GLOSS. FORD SERVICE PUB.
(1030-005)PROGRAMMED BOOK.....$3.65
FILMSTRIP AND RECORD.....$7.00

Principles, nomenclature, diagnosis & repair. Recognizing improper tire wear and its causes.

CHARGING SYSTEM DIAGNOSIS
1970. 92PP. ILLUS. GLOSSARY. FORD SERVICE PUB.
(3101-208)PROGRAMMED BOOK.....$3.65
FILMSTRIP AND RECORD.....$7.00

Principles, nomenclature, tests and diagnosis, repair. Alternators and their regulator. Electric power production and system operation.

ELECTRICAL DIAGNOSIS
85PP. FORD SERVICE PUB.
PART 1. ELECTRICAL CIRCUIT FUNDAMENTALS
(3000-206)PROGRAMMED BOOK.....$3.65
FILM STRIP AND RECORD.....$7.00

Circuits, connectors, loads, switches, diodes; electrical properties, resistance, voltage; test equipment & its use; etc.

PART 2. USING THE WIRING DIAGRAMS
86PP. FORD SERVICE PUB.
(3000-207)PROGRAMMED BOOK.....$3.65
FILM STRIP AND RECORD.....$7.00

Testing practices using the diagram, full system diagrams and their components; using diagram for troubleshooting.

AUTOMATIC TRANSMISSION DIAGNOSIS
1970. 156PP. FORD SERVICE PUB.
(1701-201)PROGRAMMED BOOK.....$3.65
FILM STRIP AND RECORD.....$7.00

Checking fluid level and interpreting fluid condition, locating causes of difficulty, using

FUNDAMENTALS

Diagnosis Guide and Charts, Linkage adj. Leakage.

AUTOMATIC TRANSMISSION SERVICE

1970. 116PP.FORD SERVICE PUBLICATION
(1701-502) PROGRAMMED BOOK P1B1 .....$3.65
FILM STRIP & RECORD FSR1.....$7.00
FILM STRIP & RECORD FSR2 .....$7.00

Analysis of failure. Cleaning & Servicing Automatic Transmission valve bodies. Convert and pump checks & cleaning.

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SERVICE PUBLICATIONS FOR USE WITH THE " FORD AUTOMOBILE MECHANIC TRAINING PROGRAM CURRICULUM OUTLINE"

CAR SHOP MANUAL SET

BASIC, INTERMEDIATE, ADVANCED. FORD SERVICE PUB.
365-126-76 .....

1976 Car Shop Manual and Car Specification Book. Provides full repair & maintenance procedures for Ford Automobiles - Recommended as a basic Reference Book throughout the Ford Curriculum at all training levels. A shop manual set for each student is recommended.

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TRUCK SHOP MANUAL SET

BASIC, INTERMEDIATE, ADVANCED. FORD SERVICE PUB.
365-127-76 .....

1976 Truck Shop Manual and Truck Specification Book. Provides full repair & maintenance procedures for Ford Trucks - Recommended as a basic Reference Book at all training levels where truck training is offered. A shop manual set for each student is recommended.

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WIRING AND VACUUM DIAGRAMS

INTERMEDIATE, ADVANCED. FORD SERVICE PUB.

(0330-063)	MODEL YEAR: 1963	.....$13.00
(0330-064)	1964	.....$13.00
(0330-066)	1966	.....$13.00
(0330-067)	1967	.....$13.00
(0330-068)	1968	.....$17.50
(0330-070)	1970	.....$24.75
(0330-072)	1972	.....$24.75
(0330-073)	1973	.....$24.74
(0330-074)	1974	.....$24.75
(0335-001)	1975(CAR)	....$15.60
(0335-101)	1975(TRUCK)	..$ 9.15
(0336-001)	1976(CAR)	....$15.60
(0336-101)	1976(TRUCK)	..$ 9.15

Contains wiring and vacuum diagrams for all Ford Motor Company cars and light trucks. Diagrams are contained in special 13" x 18" 3-ring binder.

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CAR DIAGNOSIS MANUAL - A

390PP. 9" X 12" 3--RING BINDER . FORD SERVICE PUB.
(0303-002) $29.65

Contains comprehensive easy-to-follow diagnosis and testing procedures for all systems of all 1972 - 1976 model Ford Motor Company cars.

(Ford Service Publications cont'd)

CAR DIAGNOSIS MANUAL REVISIONS
INTERMEDIATE, ADVANCED. FORD SERVICE PUB.
(0303-003) 1973 MODEL REVISION.....$6.50
(0303-004) 1974 " " $6.50
(0303-005) 1975 " " $6.50
(0303-006) 1976 " " $6.50

CAUTION: A model year revision is not a complete manual -- it includes revised pages covering only those areas that were changed from the prior model years. Revisions should be ordered only if you have the initial 1972 model manual and wish to bring it up to date.

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TRUCK DIAGNOSIS MANUAL
1971-1976. 390PP. 9" X 12" 3-RING BINDER. FORD
(0302-001) $35.00

This manual contains easy-to-follow diagnosis and testing procedures for all systems on 1971-1976 Ford Motor Company trucks.

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INSTRUCTIONAL KITS

BASIC AUTOMOTIVE STUDENT TRAINING KIT
(0100-006) $58.55
(0100-007) INTERMEDIATE.....$162.05
(0100-008) ADVANCED $240.50

Notes and Publications required by students attending training sessions based on Ford "Automotive Mechanic Training Program Curriculum Outline."

Specific contents of the instructor and student kits are contained in the Ford "Automobile Mechanic Training Program Curriculum Outline." Note that training aids are duplicated in each succeeding level of instruction, i.e. basic kit materials are included in the intermediate kit and basic and intermediate materials are included in the advanced level kit.

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INTERPRETING AUTOMOTIVE SYSTEMS
HARRY G. HILL. 1976. SOFTCOVER. VAN NOSTRAND REINHOLD
(1057-9).....$5.95
INSTRUCTOR'S GUIDE
(1058-7) $1.90

In this new text-workbook, the first two parts of each unit acquaint the automotive student with the terminology and illustrative material typically encountered during on-the-job servicing and repairing of automobiles. Much related technical information is included and the student develops a thorough understanding of each particular automotive component and term. The review helps the student evaluate his own ability to interpret automotive illustrations.
SECTIONAL CONTENTS: Engines; Fuel Systems; Electrical Systems; Brake Systems; Suspension & Steering; Lubrication; Power Train; Emission Controls; Air Conditioning and Cooling.

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FUNDAMENTALS

KNOW YOUR CAR

3/E. ALLEN, W.A. 1974.192PP. ILLUS. GENERAL PUB.
.....E$6.95
STUDY GUIDE
.....E$2.25

This revised third edition presents an introduction to the automobile, purchasing, maintenance, and use. Topics include servicing, the engine, fuel system, ignition system, electrical system, chassis and preventive maintenance, plus a new chapter on purchasing a new or used car.

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POWER: MECHANICS OF ENERGY CONTROL TEXT

RALPH C. BOHN AND ANGUS MCDONALD. 1970. 275 PP.
8 X 10 HARD COVER VAN NOSTRAND REINHOLD
(7266)..... $11.50

While this text is coordinated for use with the Power Experimenter, laboratory manuals and workbook, it can also be used as an independent unit for the study of power. It gives students an understanding of how energy is generated and converted to power and how mechanical, fluid and electrical devices are used to control, transmit and use power. Principles of physical sciences and mathematics are integrated so that the concepts underlying the transmission of harnessed energy can be emphasized. The energy cycle can be seen in the power systems and subsystems presented. The student studies the theories and concepts of mechanical, fluid and electrical energy, and then examines different power systems which apply this energy to specific situations. Students study how energy has been used in the past, its use in to-day's society and possible future uses. Lastly, the text examines opportunities in power mechanics as a possible future vocational choice.
CONTENTS: Harnessing Energy for Work; Mechanical Power; Fluid Power - Principles & Theory; Fluid Power Systems; Electrical Power - Principles & Theory; Electrical Power Systems; The Energy Man Uses; Controlling Energy for Power; Power Systems - Small Engines; Power Systems of the Future; Career Opportunities in Power Mechanics.

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POWER-PRIME MOVER OF TECHNOLOGY

JOSEPH W. DUFFY. 2ND EDITION 1972. 475PP.
8 X 10 HARD COVER. VAN NOSTRAND REINHOLD
(7282)..... $14.50

This book teaches how man converts, transmits, controls and applies energy to do work. The latest theories and data on power are incorporated into this second edition. The author discusses the various types of converted energy which he describes as "prime movers" such as fossil, gas and atomic fuels. A second section provides a detailed study of the devices and systems that generate power. He then develops understanding of those systems which are necessary to apply the generated energy and which he explains as "transactional systems." Students learn how mechanical, fluid and electrical components are used in transitional systems. The text provides a clear understanding of the scientific principles

(Cont'd)

of power, and emphasizes how industry puts power theory into practice in manufacturing and transporting its products.
CONTENTS: Direct Mechanical Converters; External Combustion Converters; Internal Combustion Converters; Conventional Electrical Converters; Direct Electrical Converters; Fluidics.

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POWER TECHNOLOGY

STEPHENSON. 1973. 304PP. HARDCOVER. VAN NOSTRAND REINHOLD
(0023-9).....$10.35
INSTRUCTOR'S GUIDE
(0024-7).....$ 1.45
LABORATORY EXPERIENCES
(0022-0).....$ 2.30

This textbook meets the needs of introductory courses in the sources of energy, prime movers and their applications to machinery propulsion. Covers such popular topics as the Wankel engine, rocketry and career opportunities in power.
CONTENTS: Introduction; Internal Combustion Engines;- Part 1 - small gasoline engine (Construction, fuel systems, lubrication, cooling systems, ignition systems, care & maintenance, troubleshooting, HP - Spec. Safety & power technology). Part 2 - Automobile Engine: External Combustion Engines; Electrical Energy; Transmission of Power; Atomic Energy; Space Age Power; Your Future in Power; Appendix and index.

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UNDERSTANDING YOUR CAR

SAMUEL C. BEELER. BRODHEAD-GARRETT
(350793).....$7.96

How it works. How to maintain it. How to inspect it.

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UNDERSTANDING YOUR CAR

SAMUEL BEELER. 2ND. EDITION 1967. 136PP.8 X 10 HARD COVER. VAN NOSTRAND REINHOLD
.....$9.40

Clearly and simply describes in non-technical language modern automotive exhaust systems, gas turbines, alternator and generator operations. Here, too, is information on transistor ignitions, differentials, self-adjusting brakes, disc brakes, dual systems, front wheel drive, installing points, hydrometer readings, batteries & mounting tires. In all, there are 38 topics including general information on taxes, insurance and how to evaluate a used car. Also, the test includes 26 easy to perform jobs from washing an automobile to basic preventive maintenance assignments involving the power plants, the running gear, the drive system, the electrical system and controls.

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WORKBOOK FOR AUTOMOTIVE SERVICE & TROUBLE DIAGNOSIS

WM. H. CROUSE. 1971. 112 PP. MCGRAW-HILL
(14620-9).....$4.40

This workbook may be used with any text in the Crouse series. It explains trouble diagnosis for and service of fuel, engine-lubrication, cooling,

and electrical systems; engine tune-up, and the chassis.
CONTENTS: Engine will not turn over; Engine turns over but does not start; Engine runs but misses; Engine lacks Power; Engine overheats; Engine is noisy; Other Engine-Operating complaints; Excessive Fuel Consumption; Poor acceleration and lack of power; Diagnosing troubles in the lubricating system; Diagnosing troubles in the cooling system; Starting system; Ignition system; Charging system; Engine tune-up; Diagnosing troubles in the clutch; Trouble diagnosis of standard transmissions; Diagnosing Automatic Transmission troubles; Diagnosing troubles in the differential; Diagnosing troubles in the springs and shock absorbers; Diagnosing troubles in the steering and front suspension system; Diagnosing troubles in the brakes.

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Your Car

STEVE VADJA. 1976. 160PP. MCGRAW-HILL
(82284-0) .....$5.95 (TENT.)

Consists of introductory core material on the operation and maintenance of the automobile. This text is excellent for general interest and night school classes, as well as technical literacy programs. Interesting cartoons and extensive end-of-unit questions are significant features.
CONTENTS: Introduction; The Car Systems; Chassis; Engine; Power Train; Electrical System; Brakes; Lubrication & Maintenance; Purchasing and Selling a Car; Driver Training; Insurance.

Auto Service And Repair

STOCKEL, M.W. 1975. 880PP. ILLUS. GENERAL PUBLISHING
.....$11.80

This revised text contains basic service and repair know-how that is applicable to all makes and models of cars. The text is written for beginners who need background in fundamentals, and also for those now engaged in automotive service and repair who want to increase their skills and earnings.

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Automobile Guide

FREDERICK E. BRICKER. 3RD EDITION. 5½ X 8¼.
800PP. HARDBOUND. A.C. SIMMONDS
(ISBN: 0-672-23192-1) (AUDEL) $12.25

This book contains comprehensive coverage of automotive knowledge. The specific coverage of automotive components, construction, and design enables the instructor to provide complete related classroom instruction. Repair procedures and troubleshooting lists help the mechanic diagnose and correct troubles that occur in any make or model of automobile.
CONTENTS: Troubleshooting; Engine tune-up; Spark plugs; Storage batteries; Distributors; Ignition testing; Alternators, starters & generators; Lighting systems; Tire servicing; Brakes; Power brakes; Front suspension; Steering systems; Front-wheel alignment; Chassis, springs, and shocks; Fuel pumps; Carburetors; Cooling systems; Engine lubrication systems; Pistons and

rings; Crankshafts and connecting rods; Camshafts; Valves; Manual transmissions and clutches; Automatic transmissions; Drive shafts and universal joints; Rear-axle assemblies; Steam power; Turbine power; Instrument panel; Front wheel drives; Speed control devices; Air conditioning.

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AUTOMOTIVE DIAGNOSIS AND TUNE-UP

GUY F. WETZEL. 1974. 592PP. 7 X 9. HARD COVER.
VAN NOSTRAND REINHOLD
(7260) $14.50

A major revision, this sixth-edition gives basic theory necessary for an understanding of the automotive power plant which helps the student in auto troubleshooting and preventive maintenance procedures. Over 200 new illustrations have been added to update this text. Content has been arranged to enable the student and worker to pinpoint trouble efficiently and make proper corrections or repairs in an organized manner. New information on test instruments, alternators and transistor ignition systems plus the latest information on exhaust and emission control methods and standards are included. Much of the text's information is not readily available to the average service man, such as analyzing engine noises, a comparison of firing orders and the causes of bearing failures. All chapters are summarized and questions are presented at the end of each chapter.
CONTENTS: Meaning of tune-up, its opportunities and obligations; Electrical fundamentals; Electrical measurements; Magnetism and induced currents; automotive electrical circuits; four-stroke-cycle-engine; pistons, cylinder walls, rings; engine bearings; diagnosing engine troubles; cooling system; electrical instruments; mechanical instruments; automotive oscilloscope; storage battery - characteristics; storage battery - care and service; charging circuit - generator - cut-out-relay; charging circuit - generator controls - battery considerations; alternating current charging circuit; charging circuit - maintenance - troubles; ignition system - coil - condenser; distributor - electronic ignition system; full-vacuum-controlled distributor - spark plugs; ignition system maintenance and troubles; fuel system - principles of carburetion; four-barrel carburetor - automotive chokes; fuel system maintenance and troubles; starting circuit - maintenance and troubles; lighting and horn circuits - turn signals; dash instruments - methods of operation, circuits, servicing, troubles; diagnosis principles and methods; tune-up procedures; automotive exhaust and emission control methods.

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AUTOMOTIVE MAINTENANCE AND TROUBLESHOOTING 4E

GOINGS, L.F. AND SPICER, E.D. 1972.319PP.
GENERAL PUBLISHING
.....$10.25
STUDY GUIDE .....$ 2.80

This 4th edition reflects changes and advances made in automotive manufacturing, equipment, and accessories. Typical changes include those made in electrical systems, fuel injection, etc. The main changes, which have altered troubleshooting and repair procedures in many cases, are thoroughly covered.

AUTOMOTIVE MAINTENANCE AND TROUBLESHOOTING
E.A. VENK AND E.D. SPICER. BRODHEAD-GARRETT
(350800) $8.75
STUDY GUIDE
(350811) $2.75

To develop fully the mechanic's ability to diagnose any difficulty that may arise.

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BASIC AUTOMOTIVE TOOLS AND HOW TO USE THEM
THE BAKER & TAYLOR COMPANIES

Easy-to-understand text and illustrations show how to choose the proper tool for a particular job, how to use tools correctly and safely and how to care for them.

BASIC AUTOMOTIVE TUNE-UP AND TEST EQUIPMENT
THE BAKER & TAYLOR COMPANIES

Step-by-step instructions with detailed line drawings explain the functions, use and care of dwell tachometers, timing lights, compression testers and other tune-up equipment.

BASIC AUTOMOTIVE TROUBLESHOOTING GUIDE
THE BAKER & TAYLOR COMPANIES

This book shows how to diagnose the exact cause of practically any automotive problem in any car.. from failure to start to failure to stop. Simplified text and line drawings show how parts are supposed to work and why they don't always work that way.

BASIC AUTO REPAIR MANUAL
THE BAKER & TAYLOR COMPANIES

Fully illustrated how-to sections pinpoint mechanical problems, advise how to get the best buy in parts, describe the right tools to use interpret the mechanical specifications and explain how to make the necessary repairs - from minor adjustments to complete overhauls.

BASIC BODYWORK & PAINTING
THE BAKER & TAYLOR COMPANIES

Covers all the fundamentals of bodywork and painting - tools, welding, panel replacement, alignment, special techniques for working with aluminum and fiberglass, sanding, priming, painting, basics and special finishes.

BASIC CARBURETION & FUEL SYSTEMS
THE BAKER & TAYLOR COMPANIES

Covers the operation of all types of carburetion and fuel systems. Includes tuning specifications and instructions for all major carburetors plus analyses of all smog-control systems.

BASIC IGNITION & ELECTRICAL SYSTEMS
THE BAKER & TAYLOR COMPANIES

Easy-to-follow text and many detailed diagrams simplify this complex automotive system and provide valuable troubleshooting instructions. Special chapter on emissions-control distributors.

HOW TO TUNE YOUR CAR
THE BAKER & TAYLOR COMPANIES

Step-by-step instructions for anyone who wants to

save fuel, reduce emissions, lengthen the life of his car and avoid the high cost of professional maintenance and repair. Tune-up specifications are provided for virtually all U.S. cars plus some popular imports.

COMPLETE BOOK OF ENGINE SWAPPING
THE BAKER & TAYLOR COMPANIES

This new edition of this popular how-to book is packed with comprehensive up-to-date information on engine swapping. Major areas covered are the use of U.S. made V-8's in U.S. compacts and imported cars, and the upgrading performance in pickups and vans.

COMPLETE BOOK OF ENGINES
THE BAKER & TAYLOR COMPANIES

This new edition contains complete engine specifications and tune-up hints for all the latest production engines plus special chapters on engine blueprinting, cylinder head preparation engine build-up and modified engines.

MOTORCYCLE REPAIR MANUAL
THE BAKER & TAYLOR COMPANIES

An indispensable handbook for every motorcycle owner. Easy-to-follow fully illustrated directions cover every type of motorcycle repair, showing which parts and equipment are needed and how to install them properly.

PAPERBACK COLLECTION $35.00

Ideal for self-instruction as well as for supplementary vocational-technical courses.

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BIG BOOK OF AUTO REPAIR
PETERSON. 1976. 896PP. ILLUS. GENERAL PUBLISHING
.....$11.95

This text covers the major mechanical and electrical systems of all U.S. passenger cars from 1970 through 1977. The BIG BOOK explains how they work, how to figure what is wrong when they don't and how to fix them. The BIG BOOK is based on actual carmaker recommendations for troubleshooting and servicing procedures.

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CAR FAULTS AND REPAIRS
1975. HAMLYN
.....$3.95

This book shows how to locate quickly a fault in any part of the mechanical and electrical systems and how to remedy the trouble.

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CAR SERVICE DATA
J.N. SEALE. 240PP. 7½ X 5IN. 19 X 12.9CM. HAMLYN
.....$9.95

This is an up-to-date compilation of essential data on the servicing of over 1,100 British and foreign cars and light commercial vehicles. Models from 1955 onwards are covered and many countries

are represented. The arrangement of the book permits instant reference.

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CHILTONS AUTO REPAIR MANUAL
CHILTON. LATEST EDITION. 1400PP. 8" X 10¾"
BRODHEAD-GARRETT
(350760).....$11.95

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CHILTONS IMPORT AUTOMOTIVE REPAIR MANUAL
CHILTON. THIRD EDITION. 1536PP. CHILTON BOOK CO.
.....$18.95

Eighteen different import automobiles with models dating from 1970 or later to 1975 are covered in this book. The Wankel engine is discussed. Metric conversion charts are included.

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EVERYMAN'S GUIDE TO AUTO MAINTENANCE
GEORGE ZWICK. 1973. 192PP. 38 ILL.
(648) PAPER.....$4.95
HARDBOUND.....$7.95

A working manual that tells how all components work, separately or in systems; what can go wrong; how to tell normal wear from imminent failure; how parts should be maintained; how you can do simple, economical repairs yourself. Reveals the facts about additives, etc. You'll see the automobile's main divisions and the

engine (diesel and rotary engines are covered). and power train, the fuel, electrical, steering, braking, and cooling systems.

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GLENN'S AUTO TROUBLESHOOTING GUIDE
BRODHEAD-GARRETT
(350771).....$1.95

This handy, pocket-size manual shows how to pinpoint any kind of car trouble, either with or without specialized test equipment and then fix the trouble fast. Many photos, diagrams, and drawings. Paper.

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PEARSON'S ILLUSTRATED CAR SERVICING SERIES FOR OWNER DRIVERS
EACH BOOK 80-96 PP. 24.8 X 18.4CM. HAMLYN
(EACH).....$2.95

The do-it-yourself series that is officially approved and recommended by the Royal Automobile Club. Each book is fully illustrated and contains clearly written, practical information on routine servicing and maintenance, fault tracing and minor repairs. Further titles on recent models are in preparation, and revised editions are issued frequently to keep the series up-to-date. CONTENTS: Austin Allegro; Austin Cambridge A60 and Morris Oxford Series V1; Austin Maxi; Ford Anglia 106E; Ford Capri; Ford Consul and Granada; Ford Corsair 1500; Ford Corsair V4; Ford Cortina Mk1; Ford Cortina Mk11; Ford Cortina Mk111; Ford Escort;

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A.L. MARTIN, LIVERPOOL. 448PP.215X140 MM.LINE ILLUS. 1970. MOTOR VEHICLE WORK-BOOKS IN S1/IMPERIAL UNITS. HODDER & STOUGHTON. LONDON, ENGLAND.
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ACADEMIC

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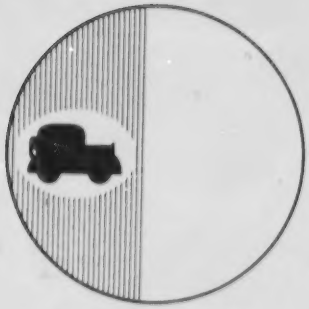

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2.3A	TOOL IDENTIFICATION & USE	47	13:53
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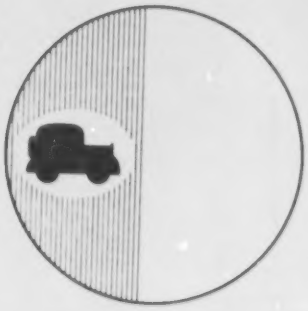

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HERSCHRL AND RAY WHITTINGTON. 1976. 256PP. 195 ILL.
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THEORY

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REPAIR

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CONTENTS: Basic electricity; Batteries; Relays & Regulators; Carburetor fundamentals; Compression; Cooling system; Carburetors and fuel systems; Ignition systems; Charging systems; Starting circuit; Positive crankcase ventilation; Engine tune-up equipment & procedures; Ignition scope testing; Exhaust emission systems; review questions.

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AUTOMOTIVE DIAGNOSIS AND TUNE-UP, A TEXT-WORKBOOK
JAMES A. JOHNSON. 1972. 480PP. MCGRAW-HILL
(32578-2).....$12.05
INSTRUCTOR'S MANUAL
(32579-0).....$ 1.75 NET.

Designed to simplify the complex job of fine-tuneing an engine, this text workbook presents a "project approach" to diagnosing and servicing automotive electrical and fuel systems. The text is divided into two parts: circuit analysis and diagnosis, and engine diagnosis and tune-up. For each topic, there is a discussion of the problem, a step-by-step explanation of procedures, a job and check out sheet, and a quiz section. Modern instrumentation is used throughout. Other features include an electrical review, and extensive illustrations and diagrams.
CONTENTS: Circuit Analysis and Diagnosis; Engine Diagnosis and Tune-Up

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AUTOMOTIVE ENGINE REBUILDING AND MAINTENANCE

GLENN (CHILTON PUB.) THOMAS NELSON & SONS

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AUTOMOTIVE ENGINES - MAINTENANCE AND REPAIR 4/E

W.C. BILLIET. 516PP. ILLUS. INC. FUEL & IGNITION 1973. GENERAL PUBLISHING

.....E$11.50

STUDY GUIDE

.....E$ 3.50

This 4th edition covers basics and is updated to include the many technical changes in the automotive field. Also included is new information on emission systems - a whole new chapter - including emission controls on carburetors, ignition systems and the Wankel engine.

* * * *

BASIC AUTOMOTIVE REPAIR LIBRARY

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A complete auto repair library of 8 "how-to" technical manuals, each packed with hundreds of illustrations complementing the easy-to-understand, step-by-step instructions.
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THE COMPLETE HANDBOOK OF AUTOMOTIVE ENGINES & SYSTEMS

A. EDWARD EVENSON. 252PP. 239ILL.1974. TAB BOOKS

(734)PAPER.....$5.95

HARDBOUND.....$8.95

A complete practical profusely illustrated guide to what happens under the hood of the modern auto. Crystal-clear but highly detailed discussion of all types of engines, fuel systems, electrical fundamentals, ignition systems, batteries, starters, alternators, lights, emission control systems test equipment, air conditioning etc.
CONTENTS: Early Engines; Engine Parts; Engine Types; Oils; Torque; Horsepower; Wankels; Cooling Systems; air conditioners; Gasoline; Refining; Octane; Fuel Pumps; Carburetors; Floats; Idle System; Power System; Chokes; Electrical Terms & Principles; Diodes; Transistors; Kettering Ignitions Transistor Ignition; Timing; Advance; Starting System; Charging System; Accessories; Emission Control; Smog; PCV; Air Injection Pump; Exhaust Gas Recirculation; Elec. Chokes; Transmission Controlled Spark; Thermal Reactors; Catalytic Converters; Test Instruments.

* * * *

ENGINE REPAIR - HEAD ASSEMBLY AND VALVE GEAR

BOB BARKHOUSE. 1974. 7 X 9. HARD COVER.VAN NOSTRAND REINHOLD

(7263).....$14.50

This book combines theory and service practices in detail. All content is logically sequenced for student comprehension from general theory and practice to special, technical instruction. Teachers can select content, from general instruction to very technical levels, in order to tailor

instruction to the student's ability. This new text is designed for high school, Junior College technical/vocational auto programs, and auto mechanic repair shop, or service station personnel preparing to qualify for state certification licenses as specified by the automotive industry.
CONTENTS: Physical Principles of Power; Fund. of the Modern Engine; Contemporary Power Plants; Pre-Teardown Diagnosis; General Methods of Cleaning; Engine Removal & Disassembly; Breathing System; Heads & Cracks; Valve Guides and Seals; Valves; Valve Seats and Parts; Spring Assembly; Rocker Arms and Push Rods; Rocker Arm Geometry; Lifters and Tappets; Camshafts; Other Purposes for the Camshaft; Cam Drives; Upper Engine Assembly.

* * * *

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238 PP. 407 ILLUS. THREE COLORS, 8½ X 11-INCH SIZE WITH SOFT COVER. OMG
(FMO-161B).....$8.00

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(407) $1.50
(408) IN FRENCH.....$1.50

A comparison of Wankel with the four stroke engine-Its advantages, how it works and how it will affect the engine rebuilder.

* * * *

STEP-BY-STEP GUIDE: CARBURETOR TUNEUP & OVERHAUL

H. & R. WHITTINGTON. 1975.224PP. 244 ILL. TAB BOOKS
(814) PAPER.....$4.95
HARDBOUND.....$7.95

Here is detailed tuneup/overhaul info.on the carburetors in 95% of U.S. cars and light trucks. Takes you through disassembly, cleaning, reassembly, and complete adjustment. 21 carburetors from five major manufacturers are taken apart and reassembled right before your eyes. Every part of each carburetor is shown in exploded view. You'll find shortcuts and special tips that just don't appear in those factory manuals. A chart tells you precisely which set of overhaul instructions applies to the car you're driving (or tuning up); all models are covered way back to 1960.
CONTENTS: Tools and Materials; Carburetor and Fuel System Basics; Carter Carburetors; Ford (Motorcraft) Carburetors; Holley carburetors; Rochester and Stromberg Carburetors; Index.

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PETERSON ACTION LIBRARY

GENERAL PUBLISHING
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(2314 609).....$3.50
BASIC CARBURETION & FUEL SYSTEMS NO. 5
(2310 632).....$3.50

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AUTOMOTIVE EMISSION CONTROL

WM. H. CROUSE. 1971. 144PP. MCGRAW-HILL
(14639-X).....$5.20

This text provides a source of information on the atmospheric pollution problem caused by automobiles and its control. It measures the extent of the problem, the sources of pollutants, and what can and is being done to eliminate the problem. It covers the latest engine, fuel-system, and ignition system modifications which reduce pollution. It also covers anti-pollution devices such as positive crankcase ventilating systems, gasoline vapor recovery systems, transmission controlled spark system and exhaust-gas recirculation system. The test describes how each device works, and how to check and service it. Alternatives to the internal combustion engine are also discussed.
CONTENTS: Air Pollution, Smog and the Automobile; How the Engine Operates; Sources of Automotive Pollution; The Champion and the Challengers; Automotive Emission Controls; Servicing the Automotive Emission Controls; Engine Tune-Up Instruments; Anti Smog Tune-Up; The Complete Tune-Up Procedure; Anti-Smog Conversion Kits.

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MODERN GUIDE TO AUTO TUNEUP & EMISSION CONTROL SERVICING

PAUL DEMPSEY. 1974. 240PP. 135 ILL. TAB BOOKS
(688)PAPER.....$5.95
HARDBOUND.....$8.95

Pollution control devices can really add miles per gallon to any modern car's mileage - provided the installation is proper and the right adjustments are made. This comprehensive guide to tuneup & emission-control servicing will pave the way to top performance of any late-model car and will help car owners get the best gas mileage of which any car is capable. Describes all modern engine systems, subsystems, and antipollution devices, and tells the steps that must be performed to keep today's cars in topnotch running condition.

EMISSION

A must for drivers concerned about gas mileage.
CONTENTS: Buying Parts; Tools you Need; Engine Basics; Battery; Fundamentals of Auto Electricity; Ignition Fundamentals; Ignition Tuneup Procedures Servicing Emission-Control Systems; Carburetion.

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FUELS, LUBRICANTS, COOLANTS

AUTOMOTIVE FUEL, LUBRICATING, AND COOLING SYSTEMS
WM. H. CROUSE AND DONALD L. ANGLIN. MCGRAW-HILL
(14648-9).....IN PRESS
WORKBOOK. 1976
(14649-7).....IN PRESS
TRANSPARENCIES 1971
ENGINE AND FUEL SYSTEMS, SECOND EDITION.
(14680-2).....$93.50 NET.

This completely rewritten text includes the latest material on carburetors, fuel systems, PCV systems exhaust gas recirculation, vapor recovery systems, catalytic converters, heated air systems, air-injection systems, thermal reactors, new fuel tanks electric-assist chokes, stratified charge engine designs, transmission-controlled vacuum advance, and lubrication systems for overhead camshaft engines and Wankel engines.
CONTENTS: Automotive Fundamentals; Fuel-System Fundamentals; Automotive-Engine Fuels; Fuel-System Operation; Carburetor Fundamentals; Automotive Carburetors; Fuel-Injection and LPG Fuel System; Air Pollution, Smog and the Automobile; Cleaning up the Exhaust Gas; Diagnosing Fuel-System Troubles; Fuel-System Service; Carburetor Service; Engine Lubricating Systems; Lubricating-System Service; Engine Cooling System; Cooling-System Service.

WORKBOOK FOR AUTOMOTIVE FUEL, LUBRICATING, AND COOLING SYSTEMS, FIFTH EDITION
WILLIAM H. CROUSE AND DONALD L. ANGLIN. MCGRAW-HILL
(14649-7).....IN PRESS

Correlated with AUTOMOTIVE FUEL, LUBRICATING AND COOLING SYSTEMS, fifth edition, this student work book functions as a shop guide, study guide, note book, and work-progress report. It provides hands-on experience through shop jobs and laboratory exercises that cover the operation and maintenance of fuel, lubricating and cooling systems. Performance objectives are stated before each shop job to give students goals for each task.
CONTENTS: Automotive Fuel Systems; Automotive Engine Fuels, Removing and Replacing Muffler and Tailpipe; Carburetor Fundamentals; Air Pollution, smog and the Auto. Engine Testing Instruments; inspecting and Testing Fuel Pumps; Checking for Excessive Fuel Consumption; Checking for Poor Acceleration and lack of power; Engine Turns Over but does not Start; Engine Runs but Misses; Servicing the Air Cleaner; Removing Servicing and Replacing Fuel Pumps; Engine Tune-Up; Servicing PCV Valves; Servicing the Air System; Testing Automotive Exhaust Emissions; Carburetor Overhaul Procedures. Carter YF Carburetor Overhaul; Carter YF Carburetor Adjustments; Carter BBD Carburetor Overhaul; Engine Lubricating Systems; Trouble Diagnosis of Lubricating System; Changing Oil and Filter; Removing Servicing and Replacing Oil Pumps; Engine Cooling Systems; Trouble Diagnosis of Cooling System; Testing & replacing Thermostats; Checking Flushing & Servicing Cooling Systems; Removing & Replacing Water Pump; Fuel Gauge, Oil Pressure and Temperature Indicators.

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FUELS, LUBRICANTS, COOLANTS

AUTO RADIATOR REPAIR AND THE COOLING SYSTEM

HARRY HOROWITZ. 1972. 256 PP. MCGRAW-HILL
(30380-0).....$7.15

This text-workbook explains the automotive cooling system and how to repair it with a logical, step-by-step procedure. The Air Conditioning System & other Cooling System parts are included to show the relationship between the radiator and the entire cooling system. A comprehensive chart shows common malfunctions and remedies.
CONTENTS: Orientation, Definition & Description: The Cooling System; Soldering; Repair Service Equipment; Jobs: Using the soldering iron, Torch soldering, Flow Test, Cleaning and Recore; Aluminum Radiators; Fuel Tanks; Air Conditioning and Cooling System; Maintenance and Malfunctions of the Cooling System and Remedies.

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Explains all three types of modern engine fuels-gasoline, LP-Gas, and Diesel. It tells how to select fuels based on octane ratings, cetane ratings, additives. It also covers all modern lubricants- additives, ratings, and classifications including new API ratings.
CONTENTS: Fuels - Gasoline Fuels, LP-Gas Fuels, Diesel Fuels, Storing of Fuels; Lubricants - Engine Oil, Gear Oils, Hydraulic Fluids, Lubric-Greases; Coolants - Water as a coolant, Anti-freezes, Conditioners, Preventive Maintenance.

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A much needed service manual exclusively devoted to the larger air cooled power units covering engines with 15 cubic inch displacement and over. The fundamentals section covers: engine, carburetor, and ignition system fundamentals. The service section includes: ignition system, carburetor, and engine service. The coverage includes the following brands: Briggs and Stratton, Clinton Craftsman, Kohler, Lauson, Onan, Tecumseh, Wisconsin, and Robin.

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RDC AUTOMOTIVE SERIES (RESOURCES)

RESOURCES DEVELOPMENT CORPORATION
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INSTRUCTORS GUIDE FOR ABOVE
(411448).....$2.00

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Covers all types of modern systems for automotive and off-the-road machinery. Starts with the basic principles of heat and matter and builds up step-by-step. It tells how each system component works. It explains use of various kinds of equipment to service air-conditioning systems, and tells how to visually inspect, diagnose and test the system. CONTENTS: Basic Principles; Refrigeration Cycle; Refrigerants; Basic Refrigeration System; Compressors; Condensers; Expansion Valves; Evaporators; Dehydrators, Controls; Service Equipment; Visual Inspection; Diagnosis; Testing; Evacuating and Charging; Trouble-Shooting Charts; Glossary.

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AUTOMOTIVE AIR CONDITIONING

L.F. GOINGS. 188 PP. ILLUS. GENERAL PUBLISHING 1974

.....E$10.75
STUDY GUIDE.....E$ 2.00

With many illustrations and explanations, this new text teaches a basic approach to installation and servicing of automotive air conditioning and heating systems. Also included are chapters on installations, heating and cooling combinations plus leak testing and trouble shooting, inspection quick checks, discharging, evacuating and charging a system.

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DIESEL - GAS - SMALL ENGINES

DIESEL AND HIGH COMPRESSION GAS ENGINES 3/E

E.J. KATES. 450PP. ILLUS. GENERAL PUBLISHING

.....E$14.95
STUDY GUIDE.....E$ 3.25

An up-to-date revision of this standard text. Provides step-by-step instructions and covers new developments in such areas as electronic ignitions, scavenging, and supercharging.

* * * *

DIESEL FUNDAMENTALS, SERVICE, REPAIR

W.K. TOBOLDT. 324PP. 1973. ILLUS. GENERAL PUBLISHING.

.....$11.50
GOODHEART-WILCOX BOOKS.....$ 9.20

This text, written in easy to understand language provides coverage of basic fundamentals of diesel operation, design, classification and construction. It includes extensive information on various systems which provide diesel engine lubrication, exhaust, filtering, starting, cooling, governing, with special emphasis on fuel injectors and ignition systems. Profusely illustrated with extra colour used to emphasize important features and stimulate student interest.

* * * *

DIESEL - GAS - SMALL ENGINES

How to Repair Diesel Engines

PAUL DEMPSEY.1975. 308PP. 237 ILLUS. TAB BOOKS
(817) PAPER.....$5.95
HARDBOUND.....$9.95

Represents a complete training course in diesel engine repair; covers automotive, marine, stationary, tractors, farm equipment and stanoby power units up to 300 h.p. Many people who own diesels and many mechanics, shy away from diesel repairs, probably because diesels are different, and the average person thinks there has to be something mysterious and unnatural about an engine that doesn't use sparkplugs, and has no carburetor. But the diesel really is no more complicated than its gasoline driven counterpart, and repairs tend to be simple when one understands the basic diesel principles. Author Dempsey maintains that service-ine is not difficult - it merely requires some appreciation of the principles and a willingness to perform precision work. He simplifies the basic principles common to all diesels, and logically explains the various systems - fuel, electrical, cooling etc. and he shows how they resemble and differ from more familiar engines. The author explains not only how diesels work, but also how to service a large number of engines of up to 300 h.p.

CONTENTS: Rudolf Diesel; Diesel Basics; Fuels & Combustion; Fuel Systems; Governors; Cylinder Head and Valves; Engine Block Service; Air System; Electrical Fundamentals; Starting & Generating Systems; Cooling Systems; Index.

* * * *

Questions and Answers on Diesel Engines

J.N. SEALE. 128PP. DIAGRAMS & INDEX. GEN. PUBLISH.
.....$4.50

A complete reference guide to all aspects of the repair and general maintenance of diesel engines.

* * * *

Care and Operation of Small Engines, Vol. 1

150 PP. 8½ X 11. 274 ILLUS. 4 COLORS. OMG
.....$8.00

To prepare a student for operating and servicing his own engine, or for employment in industries where small engines are operated. Gives detailed step by step procedures on basic principles and how to service and/or adjust the following: Fuel System, Air Cleaners, Carburetors, Batteries, Starters, Spark Plugs, Crankcase breathers. Operating procedures are given and safety precautions are stressed.

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Maintenance and Repair of Small Engines Vol.11

208 PP. 8½ X 11. 554 ILLUS. 4 COLORS. OMG
(109).....$9.00

To prepare the student for maintenance & repair of his own engine, or for employment in industries where small engines are repaired. Gives detailed step-by-step procedures on basic principles and how to repair or replace the following (safely): Starters, ignition systems, fuel systems, governors carburetors, flywheels, valves cylinders, pistons, rods, camshafts, crankshafts, and cylinder heads.

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DIESEL - GAS - SMALL ENGINES

ALL ABOUT SMALL GAS ENGINES
J. PURVIS. 1963. 304PP. 375 ILLUS. GENERAL PUBLISH.
.....$6.50

This text provides instructional material on small two cycle and four cycle gas engines as used on mowers, chain saws, scooters, outboards, etc.

* * * *

EASI-GUIDE TO SMALL GASOLINE ENGINES
A.C. SIMMONDS
(ISBN: 0-672-21095-9).....$4.40

Make minor repairs & adjustments to small engines with this book. It covers such items as fuel, carburetor, and spark plug problems; point, condenser, and magneto adjustments; and propulsion systems for mowers and minibikes. An entire chapter is devoted to dollar-saving hints that will keep small engines running smoothly and economically.

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GAS ENGINE MANUAL
HARDBOUND. A.C. SIMMONDS
(ISBN: 0-672-23061-5) (AUDEL).....$7.80

A helpful guide for mechanics and operators faced with the operation, maintenance and repair of modern gas engines of all types & sizes.

* * * *

HOW TO REPAIR SMALL GASOLINE ENGINES
PAUL DEMPSEY. 1972. 288PP. 124 ILLUS. TAB BOOKS
(617) PAPER.....$5.95
HARDBOUND.....$8.95

A complete "how-to" guide on small gas engine repair, troubleshooting, alignment, and maintenance. It's a powerful tool for the do-it-yourselfer and the beginning and professional mechanic who repairs lawnmowers, motorcycles, Go-Karts snowmobiles, small boats, chain saws, and all other devices that use any type of small gasoline engine. In clear-cut language, the book tells how each type of small engine operates, how to spot trouble & isolate the problem, how to recognize signs of abnormal wear, and how to disassemble, overhaul and reassemble single and multiple - cylinder engines. Loaded with hints, tips and practical shortcuts.
CONTENTS: Theory of Operation & Troubleshooting procedures; Ignition Systems; Fuel Systems; Electrical Systems; Engine Service; Power Transmission; Accessories & Controls; So you want to Start a Shop.

* * * *

SERVICING SMALL GAS ENGINES
B. DAUGHERTY. 1969. 144PP. ILLUS. GENERAL PUBLISH.
..... $6.50

This book covers the basic principles of small gas engine operating, troubleshooting, and repair. Beginning with a description of how two and four cycle engines operate, it goes on to examine their internal parts in detail.

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DIESEL - GAS - SMALL ENGINES

Small Gas Engines

A. C. ROTH. 1975. 232PP. ILLUS. GENERAL PUBLISH.
.....$8.00

This new text provides basic instruction in fundamentals, operating principles, troubleshooting on two and four cycle gas engines wuch as used on mowers, outboards, chain saws, snowmobiles etc. Profusely illustrated. Written in non-technical language. Extra colour is used to emphasize and clarify important details. Also contains excellent reference section, dictionary of terms, and career opportunities.

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Small Gasoline Engines

MANUAL. 1973 EDITION. 80PP. 100 ILLUS. TWO COLOR.
OMG
(473).....$4.75

The latest information on principles of operation, adjustment & maintenance of both 2 and 4-stroke cycle engines is included along with classroom and laboratory exercises for each chapter.
CONTENTS: Two & Four-Stroke cycle Engine Operation; Compression Systems; Measuring Devices; Carburetion Systems; Ignition Systems and Maintenance and Trouble Shooting.

* * * *

Small Gasoline Engines

STEPHENSON. 1973. 208PP. SOFTCOVER. PLASTIC LAMINATED. VAN NOSTRAND REINHOLD
(0026-3).....$5.10
INSTRUCTOR'S GUIDE
(0027-1).....$1.90

In-depth coverage of recent developments include the addition of horizontal and vertical crankshaft engine design, updated revisions on characteristics of gasoline, recent API oil viscosity classifications, latest details on solid state ignitions and how they effect spark plug wear, the latest manufacturers specifications, plus a completely new unit on the rotating combustion Wankel engine.
CONTENTS: Man's Struggle to Harness Energy; Work Energy, Power; Construction of the Reciprocating Gasoline Engine; Fuel Systems, Carburetion, Governors; Lubrication; Cooling Systems; Ignition Systems; Routine Care and Maintenance; Winter Storage; Troubleshooting Tune-Up; Reconditioning; Horsepower; SPECIFICATIONS: Buying Consideration; Rotating Combustion Engines. APPENDIX: Acknowledgments; INDEX.

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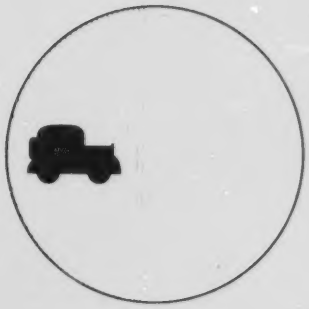

ENGINE AND RELATED SYSTEMS

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A compound piston steam engine of the slide valve type, with working piston, valve and flywheel.

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The individual titles are: Basic Parts & Operation; Lubrication and Valve Operation; Carburetion, Ignition and Cooling; Valve Problems: Causes and Corrections; How to do a Valve Job.
BASIC PARTS AND OPERATION - This filmstrip begins with an introduction to a full-size cutaway model of a Chevrolet Engine on exhibit at the General Motors Building in New York. Starting at the Combustion Chamber the basic operation - intake, Compression, Power & Exhaust are shown as they actually occur. Additional parts are detailed... Flywheel, Vibration Damper, Fan Pulley Assembly, Timing Chain, Crankshaft, Piston, Piston Pin &

THEORY

Connecting Rod. The Cam ground shape of the Piston, the purpose of Piston Rings & the function of Bearings are also explained.
LUBRICATION & VALVE OPERATION - Starts with Force Feed Lubricating System. Also explains purpose of Oil. Details function of Oil Pump & Parts that are lubricated. Oil Filters and Valve operation are described including the Camshaft. Timing Chain & Sprockets, and the Valve Train. Adjustable valves are detailed. A description of Hydraulic Valves and how they work is also given.
VALVE PROBLEMS: CAUSES AND CORRECTIONS: - Starts with troubleshooting an Engine "miss". The requirements of a Compression test are given. Oil is injected into the cylinder following the first reading - and the meaning of the second reading is given. Various causes of a "miss" are detailed including faulty seating, sticking valve operation of parts in Valve train, broken rocker arm or valve spring, worn cam lobe, faulty lifter, excessive valve lash and an out of place push rod. The function of head gasket is also explained.
HOW TO DO A VALVE JOB - Introduces the sixteen specialized tools needed to do a Valve job. Wearing safety glasses, the mechanic goes through a step-by-step procedure. Nothing is left out - Every step is clearly explained... taking the Head off ... removing the Valves...Cleaning and Refacing the Valves, Stems and Seats. Margin, Shims, Oversize Valves, narrowing a Seat and checking spring tension are also included. The complete assembly of the Head, preparation of the Block and the final checks are also shown.

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CARE AND OPERATION OF SMALL ENGINES

VOL. 1. TRANSPARENCY MASTERS. 88 8½ X 11. OMG
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Parallels illustrated text.

VOL. 1. 193 2X2 COLOR SLIDES OMG
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Parallels illustrated text.

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VOL. 11. TRANSPARENCY MASTERS. 88 8½ X 11. OMG
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FOUR-STROKE CYCLE ENGINE

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Explains the four-stroke cycle. Discussion of each of the four strokes, valve timing, camshaft overlap, companion cylinders and engine numbering systems. Job sheet requires students to look up specifications of four different engines; provides good training in how to find specifications.

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THEORY

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PS-635.....$43.00

Illustrates functions of the four-cycle engine. Has working overhead intake and exhaust valves, crankshaft and piston.

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PS-640.....$36.50

The simplest of internal combustion engines. Can be moved slowly by hand to demonstrate operation and function of parts.

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Understanding Horsepower

TRANSPARENCY MASTERS. OMG
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This set of 34 transparency masters is designed to aid the instructor in teaching the concepts and principles of horsepower. The unit was developed to take the student from the basic to a full understanding of horsepower. First, the terms related to horsepower are defined, then numerous example problems are presented. The masters may be used as worksheets. This unit was developed by a teacher trainer for use in teaching tractors, small engines and electric motors. These masters are ready to be made into transparencies.

REPAIR

Engine

TRANSPARENCY MASTERS. JOHN DEERE. FOS
200 MASTERS ON HEAVY 8½ X 11 SHEETS. BLACK & WHITE

COMPLETE SET.....$22.00 POSTPAID
A complete set selected from key illustrations in the "Engine" manual. For use in classroom for making transparencies, work sheets, or both. Illustrations for masters are bold with large captions and are on durable sheets. Folder included with tab for easy filing.

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Automotive Engine Running

OMNIDATA MODEL 222.....$3,995.00

This model 222 serves to demonstrate the principles of operation and troubleshooting of a current model, automotive, four stroke, internal combustion engine. Normal operation and 15 different malfunctions may be simulated in addition to many conditions where readjustment & tune-up are required. The simulator has built-in test equipment: dwell meter, tachometer and timing light. Adjustments include mixture, point gap, timing, idle speed & throttle. Every setting of every control duplicates (in the simulator) all conditions throughout the system of the actual unit under the same conditions. Pushbuttons are used to "replace suspected defective parts. Others provide visual aids in the form of appropriately illuminated indicators. Timing, dwell, idle mixture, idle speed, etc. may be monitored at any time. The student may also perform compression tests and vacuum system checks. When adjustments are out of tolerance appropriate symptoms are produced. Dwell & timing interact in a realistic manner.

REPAIR

Automotive Engine Measuring Procedures

2 MODULES. HOFFMAN

(32-2103).....		FRAMES	TIME
2.5.2	MEASURING INSTRUMENTS	39	12:29
3.2.6	CHECKING, CYLINDER SIZE & TAPER	33	7.01

TOTAL: NO. FRAMES 72/TIME: 19:30

Measuring instruments such as feeler gauges, micrometers, and dial indicators are explained; and actual applications are illustrated by making cylinder and bore measurements.

* * * *

Automotive Engine Systems

TRANSPARENCIES. 1976. CROUSE, HEISE. MCGRAW-HILL-RYERSON
(14685-3).....$93.50 NET.

Intake and exhaust systems, air injection systems, and cooling, lubricating and ignition systems are presented in this six-unit set.

* * * *

Engines

SLIDE SET. 300 COLOR SLIDES(35MM.) DEERE. FOS
COMPLETE SET.....$99.75 POSTPAID

A comprehensive slide set of the illustrations in the "Engines" Manual. Slides are in same sequence as in the manual. Have chapter heads and pleasing backgrounds. For use in classroom with "Engines" manual as students' text.

Rhombic Drive Stirling

MOVEABLE TRANSPARENCIES. OMG
PS-605.....$53.00

This Stirling engine utilizes a rhombic drive system. Interesting model for mechanisms and engine studies classes.

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Automotive Engine Starting

MODEL 221 OMNIDATA
.....$3,690.00

Realistic simulation with problems in cranking, fuel & ignition systems. Visual checks of plugs, spark, points, cell tester, rotor, distributor cap, fuel flow, carburetor. Burn out proof multimeter built in, wiring test points for continuity measurements, condenser test capability, customer complaint panel.

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Engine Tune-Up

BW605 3 COLOR FILMSTRIPS & TEACHER'S GUIDE
OMG
605R WITH 6 - 12" RECORDS.....$54.50
605C WITH 3 CASSETTES $61.50

Individual titles are: The Right Approach; Preventive Maintenance Techniques; Final Adjustments and Electronic Testing.
THE RIGHT APPROACH: Identifies reasons for a tune-up. Explains purpose for "Compression Test",

and step-by-step procedure in doing it. Also interprets readings and shows "Wet Test." Explains causes for spark plug failure. Shows how to re-use spark plugs. Details work on the Distributor emphasizing the service and installation of the Points. Describes Cam installation of the Points Describes Cam Angle Error and use of Distributor Scope.
PREVENTIVE MAINTENANCE TECHNIQUES: Begins by showing installation of Rotor. Details examination of Distributor Cap, high tension Wires, the Coil, the Carburetor, and Automatic Choke. Explains need for checking for gasoline leaks and how to check a fuel pump for Pressure, Vacuum and Capacity tests. Also shows Battery service and how to check the Starter Circuit. Concludes with an examination of the Cooling System.
FINAL ADJUSTMENTS & ELECTRONIC TESTING: Begins with basic service on Emission Control... "Open-type" and "Closed-type" including P.C.V. Valve, Controlled Combustion System and Evaporation Emission Control System. Also checks other tune-up procedures such as proper Coil polarity. Point dwell, initial timing, throttle controls, and C.E.C. Solenoid. Shows purpose for Electronic testing to check tune-up work ... spark patterns on Oscilloscope. Ends by showing checks on other engine parts.

* * * *

ENGINES

FILMSTRIPS. MEDEX
COMPLETE $39.95
VALVE OPENING AND CLOSING
AM-6.....$10.50
VALVE CONSTRUCTION
AM-5.....$ 6.25

PISTON AND ROD ASSEMBLY
AM-7.....$4.75
ENGINE LUBRICATION
AM-10.....$4.25
OIL FILTER SYSTEMS
AM-26.....$2.25
OIL FILTER REPLACEMENT
AM-46.....$3.25
HYDRAULIC VALVE LIFTER
AM-27.....$2.25
EXHAUST SYSTEM
AM-47.....$3.25
MUFFLER REPLACEMENT
AM-48.....$3.25

COMPLETE SET AS ABOVE AVAILABLE FROM EALING SCIENTIFIC (MEGATECH) $38.10

* * * *

GASOLINE ENGINES REPAIR TECHNIQUES - ADVANCED

2 FILMSTRIPS AND 2 RECORDS. FORD (2101-520) $19.90
STUDENT REFERENCE BOOK $3.70

Discusses frequently performed repair operations, i.e. valve grinding, ring replacement, bearing replacement, etc. Describes techniques, procedures and equipment required to do fast, effective high quality work.

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DIESEL ENGINE - PRINCIPLES OF OPERATION INTERMEDIATE AND ADVANCED

FILMSTRIP AND RECORD. FORD (2202-102).....$9.95

REPAIR.

STUDENT REFERENCE BOOK
(2202-102).....$3.70
TRANSPARENCIES (12) AND INST. NOTES
(2202-103)..... $18.00
NOTES ONLY
(2202-103)..... $5.35

Discusses diesel engine principles of operation on a basic level. Based on the Ford "Dagenham" 330 cubic inch 6 cylinder diesel engine.

* * * *

IGNITION SYSTEM - PRINCIPLES OF OPERATION - INTERMEDIATE AND ADVANCED

FILMSTRIP AND RECORD. FORD
(2301-101) $9.95
PROGRAMMED INSTRUCTION BOOK
(2301-102) $4.80

Discusses the construction & functioning of conventional and basic transistorized ignition systems. PIB is especially detailed & goes into the construction & functioning of each component of the system such as heat range of spark plugs. etc.

* * * *

IGNITION SYSTEM - DIAGNOSIS & ADJUSTMENT - INTERMEDIATE AND ADVANCED

TRANSPARENCIES (44) AND INSTRUCTOR NOTES. FORD
(2301-2-4) $35.00
(2301-203) NOTES ONLY.....$5.35

Discusses testing of system with both conventional meters and with oscilloscope. Excellent scope pattern illustrations. Also describes basic adjustment and minor repair techniques.

* * * *

IGNITION - DRIVEABILITY - INTERMEDIATE AND ADVANCED.

STUDENT REFERENCE BOOK. FORD
(2301-205) KIT.....$4.00

How the ignition system operates, including description of system, trouble symptoms, tests, and adjustments. Includes pocket card and wall chart.

* * * *

IGNITION - SOLID STATE - INTERMEDIATE AND ADVANCED

STUDENT REFERENCE BOOK. FORD
(2302-006) $3.25

Discusses the operation, diagnosis and testing of the solid state ignition system.

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AUTOMOTIVE ENGINE REMOVAL & REPLACEMENT

2 MODULES. HOFFMAN
(32-21-6).....

	NO. FRAMES	TIME
5.2.1 AUTO ENGINE REMOVAL	34	5:13
5.7.1 ENGINE INSTALLATION	33	4:38

TOTAL: NO. FRAMES 67/TIME 9.51 MIN.

Outlines procedures for removing and replacing the engine as a unit.

AUTOMOTIVE ENGINE SUBASSEMBLY OVERHAUL OPERATIONS & PROCEDURES

6 MODULES. HOFFMAN
(32-2104) PER MODULE.....$27.50
SLIDE SET.....$36.50

		FRAMES	TIME
2.9.1	RECONDITIONING THREADS	31	8:46
3.2.4	REMOVAL OF PISTONS, RINGS & CONNECTING RODS	34	7:52
3.2.5	INSTALLATION OF PISTON RINGS	23	5:10
3.3.1	CRANKSHAFT CHECKING, MEASURING AND RECONDITIONING	52	10:00
3.4.2	CAMSHAFT BEARING INSTALLATION	27	6:06
5.6.1	CLUTCH REPLACEMENT	50	7:02

TOTAL: NO. FRAMES 217/TIME 44:56 MIN.

How to recondition stripped threads. Procedures for proper disassembly of the pistons, connecting rods, installation of new rings, measuring and checking surfaces and bearing installations.

This course is designed to provide a trainee with skills and knowledge required for entry-level capability in Automotive Engine Repair. The course is composed of individual instructional Modules, each covering a specific skill area. The modules are grouped into subject-area Clusters that allow the instructor to tailor the course to fit individual training objectives. Additional clusters of modules which complete the course are listed below. The course may be purchased in its entirety, or individual clusters or modules may be purchased separately.

CHRYSLER CORPORATION ENGINE DISASSEMBLY AND REASSEMBLY

4 MODULES. HOFFMAN
(32-2107) PER MODULE $27.50
SLIDE SET.....$36.50

		FRAMES	TIME
5.3.1G	DISASSEMBLY PROCEDURES FOR CHRYSLER SLANT 6 ENGINE	48	6:57
5.5.1G	ASSEMBLY OF CHRYSLER SLANT 6 ENGINE	67	11:00
5.3.1H	DISASSEMBLY PROCEDURES FOR CHRYSLER V-8 ENGINE	51	8:06
5.5.1H	ASSEMBLY OF CHRYSLER V-8	72	12:43

TOTAL: NO. FRAMES 238:TIME 38:46

Procedure for disassembly, overhaul and assembly of Chrysler 6 and 8 cylinder engines.

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FORD MOTOR COMPANY ENGINE DISASSEMBLY & RE-ASSEMBLY

4 MODULES. HOFFMAN
(32-2108) PER MODULE.....$27.50
SLIDE SET.....$36.50

		FRAMES	TIME
5.3.1D	DISASSEMBLY PROCEDURES FOR FORD 6 ENGINE	54	9:56
5.5.1D	ASSEMBLY OF FORD 6 CYLINDER ENGINE	69	12:06
5.3.1F	DISASSEMBLY PROC. FOR FORD V8	55	10:50
5.5.1F	ASSEMBLY OF FORD V8 ENGINE	79	20:06

TOTAL: NO. FRAMES 257/TIME 52:58

Procedure for disassembly, overhaul & assembly of Ford Motor Company 6 and 8 cylinder engines.

REPAIR

General Motors Engine Disassembly & Reassembly

6 MODULES. HOFFMAN
(32-2109) PER MODULE.....$27:50
SLIDE SET.....$36:50

		FRAMES	TIME
5.3.1B	DISASSEMBLY PROCEDURES FOR THE VEGA, 4 CYLINDER OVERHEAD CAM ENGINE	61	10:56
5.5.1B	ASSEMBLY OF VEGA, 4 CYLINDER OVERHEAD CAM ENGINE	99	25:19
5.3.1A	DISASSEMBLY PROCEDURES GM 6 ENG.	49	7:35
5.5.1A	ASSEMBLY OF GM 6 ENGINE	67	12:18
5.3.1C	DISASSEMBLY PROCEDURES GM 8 ENG.	41	6:27
5.5.1C	ASSEMBLY OF GM V8 ENGINE	58	9:44

TOTAL: NO. FRAMES 375/TIME 1 HR. 12:19 MIN.

Procedures for disassembly, overhaul and assembly of General Motors 4,6 and 8 cylinder engines.

* * * *

Operation of Automotive Engines Systems

7 MODULES. HOFFMAN
(32-2101) PER MODULE.....$27:50
SLIDE SET.....$36:50

		FRAMES	TIME
2.6.1	ENGINE GASKETS, SEALANTS & SEALS	41	9:54
2.10.1	ENGINE FILTERS	46	13:16
4.2.6	FUEL SYSTEMS	20	4:45
4.2.9	COOLING SYSTEMS	17	3:51
4.3.1	LUBRICATION SYSTEMS	19	4:26
5.8.1	ELECTRICAL SYSTEMS	19	6:35
6.1.1	EMISSION CONTROL SYSTEMS	49	14:48

TOTAL: NO. FRAMES 211/TIME 57:35 MIN.
Explanation of functional operation of various eng. systems, their purpose & servicing - cover in detail.

66

Wankel Engine PS-600

MOVEABLE TRANSPARANCIES. OMG
.....$50.00

The Wankel rotary cycle engine is under development as a replacement for the reciprocating piston-style engines. Model explains complex cycling of the rotor with relation to inlet port, exhaust port and spark plugs.

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Sound-Filmstrip Program 1976, sets 1 & 2

12 SOUND-FILMSTRIPS. MCGRAW- HILL- RYERSON
(79381-6).....IN PRESS

SET 1: (6 SOUND-FILMSTRIPS)
(79353-0).....IN PRESS
INTRODUCTION TO THE AUTOMOBILE
PISTON-ENGINE OPERATION
IGNITION SYSTEMS
ENGINE CONSTRUCTION: CYLINDER-BLOCK, CYLINDER HEAD, CRANKSHAFT, AND BEARING
ENGINE CONSTRUCTION: PISTONS, RINGS, AND CONNECTING RODS
ENGINE CONSTRUCTION: VALVE AND VALVE TRAINS.

SET 2 : (6 SOUND-FILMSTRIPS)
(79354-9).....IN PRESS
AUTOMOTIVE FUEL SYSTEMS
AUTOMOTIVE CARBURETORS
ENGINE LUBRICATING SYSTEMS
ENGINE COOLING SYSTEMS
AUTOMOTIVE EMISSION CONTROLS - PART 1
AUTOMOTIVE EMISSION CONTROLS - PART 2

WORKBOOK FOR THE SOUND-FILMSTRIP PROGRAM (PKG. 10)
(14747-4)..... IN PRESS

REPAIR

P.C.V. Systems - Operation & Service

COLOR FILMSTRIP (36 FRAMES) AUDIO CASSETTE, WORKSHEET AND INFORMATION SHEET. OMG
(TL-11A).....$22.00

Covers operational theory of the P.C.V. System, System Testing and Correct Service Procedures. Includes both Factory Installed and After-Market Systems.

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VALVE SERVICE

Carburetor

MOVEABLE TRANSPARENCIES. OMG
PS-645.....$101.00

Shows actual fluid flow through a working float-type carburetor. By using water and a vacuum-cleaner, the student can follow the path of fluid from the float bowl to the intake manifold. A 3M ScienceStand may be used for overhead projection from a vertical position.

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Ignition Distributor

DUAL ADVANCE & CENTRIFUGAL ADVANCE, INTERMEDIATE, TRANSPARENCIES, FORD
(2310-102).....$5.35

Discusses the construction & functioning of distributor with centrifugal & vacuum advance mechanisms and of distributor with centrifugal advance.

Carburetor

TWO AND FOUR VENTURI, INTERMEDIATE, TRANSPARENCIES (21) AND INSTRUCTOR NOTES ONLY, FORD
(2400-009).....$25.00

Discusses construction and functioning of two and four venturi carburetors used on older Ford models. Covers disassembly & overhaul & assembly adjustments.

Carburetor

SINGLE VENTURI, INTERMEDIATE/ADVANCED, TRANSPARENCIES (16) AND INSTRUCTOR NOTES ONLY, FORD
(2400-010).....$22.00
(2400-002)NOTES.....$ 5.35

Discusses construction & functioning of Ford single venturi carburetor used on older models. Good introduction to relatively simple carburetor systems. Describes overhaul and assembly adjustments.

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Coil and Condenser

6 MODULES. HOFFMAN
(32-0409) PER MODULE.....$27.50
SLIDE SET.....$36.50

	FRAMES	TIME
6.2A VISUAL INSPECTION OF COIL (AUDIO)		5:06
6.2B VISUAL INSPECTION OF CONDENSER (AUDIO)		6:09
6.2B-1 VISUAL INSPECTION OF CONDENSER	24	6:20

Introduces inspection & test procedures for coil & condenser, and how to read and interpret oscilloscope patterns.

VALVE SERVICE

DISTRIBUTOR

1 MODULE. HOFFMAN
(32-2110)PER MODULE.....$27.50
SLIDE SET.....$36.50

		FRAMES	TIME
4.2.1	DISTRIBUTOR INSTALLATION	46	12:42

TOTAL: NO. FRAMES 46/TIME 12:42

Detailed procedure on how to install the distributor properly to maintain correct engine timing.

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DISTRIBUTORS & TIMING PROCEDURES

4 MODULES. HOFFMAN
(32-0410)PER MODULE.....$27.50
SLIDE SET.....$36.50

		FRAMES	TIME
6.3A	CONTACT BREAKER POINTS ADJUSTMENT	21	4:49
6.3B	CAM ANGLE, CENTRIFUGAL AND VACUUM ADVANCE	28	6:01
6.3C	USE OF DISTRIBUTOR TESTER	64	13:10
6.5A	IGNITION TIMING PROCEDURE-ENGINE RUNNING	26	6:30

TOTAL; NO. FRAMES 139/TIME 30:30

Proper adjustment procedures for setting breaker point gap and engine timing, and using the distributor test stand to determine efficienty.

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VALVE AND SEAT REFINISHING

2 MODULES. HOFFMAN
(32-21-5) PER MODULE.....$27.50
SLIDE SET.....$36.50

		FRAMES	TIME
3.1.2	VALVE RECONDITIONING	62	11:26
3.1.3	VALVE SEAT RECONDITIONING	40	6:15

TOTAL: NO. FRAMES 102/TIME 17:41

Valve resurfacer use is described.

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DISASSEMBLY & INSPECTION PROCEDURES

COLOR FILMSTRIP (34 FRAMES). AUDIO CASSETTE.
WORKSHEET. OMG
TJ-10A.....$22.00

The first of three programs on valve service, this book presents the manipulative procedures for cleaning, disassembly inspection, crack detection and valve spring testing on overhead valve cylinder heads, and valve specifications.

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VALVE SERVICE- FACING AND ROCKER ARM SERVICE

COLOR FILMSTRIP (34 FRAMES). AUDIO CASSETTE.
WORKSHEET. OMG.
TJ-10B.....$22.00

Valve refacing, tipping, and rocker arm service are covered.

VALVE SERVICE

VALVE SERVICE-SEATING AND ASSEMBLY PROCEDURE

COLOR FILMSTRIP (33 FRAMES), AUDIO CASSETTE AND WORKSHEET. OMG
TJ-10C.....$22.00

Covers seat regrinding, seat narrowing, and assembly procedures including measurement of installed spring height.

* * * *

SHOP ASSIGNMENTS - PART 1

FILM. MORELAND-LATCHFORD
(17-713) COLOUR.....175.00 13 MIN.

Steps in this film cover the method of removing the cylinder head of an "I" head engine. Removing valves, cleaning valve seats, and replacing are shown, followed by the method of replacing the head gasket, cylinder head, and the correct tightening sequence. Intermediate, Senior, Adult.

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SHOP ASSIGNMENTS - PART 2

FILM. MORELAND LATCHFORD
(17-714) COLOUR.....$175.00 14 MIN.

Removal and replacement of a piston and connecting rod assembly are shown, with the tools required for the job. Gear and rotor type oil pumps are described, taken apart and re-assembled. The fuel pump is taken apart and re-assembled. Intermediate. Senior. Adult.

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VALVE TRAIN

MOVEABLE TRANSPARENCIES. OMG
PS-630.....$36.50

This operating model includes the cam rotating around its cam shaft, push rod and rocker arm assemblies, valve and valve seat.

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AUTOMOTIVE TRANSPARENCIES SERIES

TRANSPARENCIES. GENERAL PUBLISHING

SET"B"
SUBSET B .....NET $38.50

(17) CARBURETOR (18) UPDRAFT CARBURETOR (19) FUEL PUMP OPERATION (20) AUTOMATIC CHOKE (21) FUEL INJECTION (22) HYDRAULIC PRESSURE (23) POWER OVERLAP (24) OVERHEAD VALVE ASSEMBLY (25) L-HEAD VALVE CONSTRUCTION (26) VALVE TIMING (27) HYDRAULIC VALVE LIFTER (28) STANDARD TRANSMISSION OPERATION (29) STARTER (30) DIFFERENTIAL.

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COOLING

CONTROLLING ENGINE TEMPERATURE

FILMSTRIP & RECORD. CHRYSLER
(71-3) $7.00
STUDENT REFERENCE BOOK
.....$2.00

Explains the Function of the Cooling System, Coolants, Etc.

COOLING

Cooling System Service

COLOR FILMSTRIP (36 FRAMES). AUDIO CASSETTE, WORK-SHEET. OMG
TJ-5A.....$22.00

Discusses the necessary fundamentals of cooling systems, and the major and minor operations in servicing a liquid cooling system. Includes diagnosis, testing, flushing and adjustments.

* * * *

The Cooling System

OVERHEAD TRANSPARENCIES. 1972
MEDEX
AM-11 RADIATOR CONSTRUCTION.....$6.25
AM-12 WATER PUMP $6.25
AM-13 FAN BELT ADJUSTMENT.....$3.25
AM-33 THERMOSTAT & PRESSURE CAP.....$3.85
AM-34 ENGINE TEMPERATURES.....$4.25
COMPLETE SET..... $23.35

The Clutch Assembly

OVERHEAD TRANSPARENCIES. 1972
MEDEX
AM-14 THE CLUTCH.....$6.25
AM-35 SEMI-CENTRIFUGAL CLUTCH.....$4.45
COMPLETE SET.....$10.50

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127

Cooling System

6 MODULES. HOFFMAN

		FRAMES	TIME
8.2A	RADIATOR PRESSURE CAP TEST	18	3:22
8.3A	COOLING SYSTEM LEAKAGE & DETECTION TEST PROCEDURE	32	4:57
8.4A	THERMOSTATS - THEORY & FUNCTION	15	3:16
8.4B	THERMOSTAT REMOVAL & REPLACEMENT	18	3:36
8.5A	WATER PUMP - THEORY & TESTING	24	3:17
8.5B	WATER PUMP - REMOVAL & REPLACEMENT	32	6:30

TOTAL: NO. FRAMES 139/TIME 24:58 MIN.

Theory and function of the cooling system, its component parts and replacement procedures for necessary repairs.

TECHNAMATION
8.3G ENGINE COOLING SYSTEM

Each Technamation module consists of a single polarized slide which requires a polarizing device on the projector to simulate motion. Each is a special order.

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128

COOLING

The Cooling System - GROUP IV

MULTICOLOURED TRANSPARENCIES WITH OVERLAYS
EALING SCIENTIFIC MEGATECH
AM-11 RADIATOR CONSTRUCTION
AM-12 WATER PUMP
AM-13 FAN BELT ADJUSTMENT
AM-33 THE COOLING SYSTEM THERMOSTAT & PRESSURE CAP
AM-34 ENGINE TEMPERATURES.
COMPLETE SET.....$22.70

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The Fuel System

OVERHEAD TRANSPARENCIES. 1972. MEDEX
AM-1 UNITS OF FUEL SYSTEM.....$5.00

CARBURETOR CIRCUITS:
AM-3 PARTS AND SYSTEM $10.50
AM-4 ACCELERATION DURING PUMP DISCHARGE.....$5.75
AM-2 ACTION DURING OPERATION OF POWER SYSTEM.....$5.00
AM-45 FUEL FLOW AND CHOKE.....$3.25
AM-25 MECHANICAL FUEL PUMP.....$3.85

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FUEL & EMISSION

Megatech Emission Analyzer.

MODULE C. MODEL GA1. EALING SCIENTIFIC MEGATECH
(40-100).....$1199.00
INTERCONNECTION SET FOR WANKEL TO MEGATECH EMISSION ANALYZER
(AC21-1).....$ 29.95
ANALYZER TABLE
(40-WT1).....$ 39.00

MEGAPOWER MP-4 ROTARY ENGINE - LABORATORY MANUAL FOR MODULE C
(MP-400-C).....$6.95

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Emission Control Systems - GROUP XI

MULTICOLOURED TRANSPARENCIES WITH OVERLAYS
EALING SCIENTIFIC MEGATECH
AM-83 FEDERAL LAW REQUIREMENTS
AM-84 POSITIVE CRANKCASE VENTILATION (P.C.V.)
AM-85 CONTROLLED COMBUSTION SYSTEM (C.C.S)
AM-86 AIR INJECTION REACTOR (A.I.R.)
AM-94 POSITIVE CRANKCASE VALVES
AM-95 THERMOSTATICALLY CONTROLLED AIR CLEANER
COMPLETE SET.....$29.70

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Emission Control Systems

OVERHEAD TRANSPARENCIES. MEDEX
AM-84 POSITIVE CRANKCASE VENTILATION..$4.25
AM-85 CONTROLLED COMBUSTION SYSTEM....$4.25
AM-86 AIR INJECTION REACTOR.....$4.25
AM-94 POSITIVE CRANKCASE VALVES.....$7.95
AM-95 AIR CLEANER (THERMOSTAT CONTROLLED.....$3.25
COMPLETE SET.....$23.75

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FUEL & EMISSION

EMISSION CONTROLS

1974. SLIDES. CHRYSLER
TMK-103 73 SLIDES.....$36.50
TRAINING BOOKLET.....$ 2.00

1975. SLIDES. CHRYSLER
TM-506 135 SLIDES.....$67.50
TRAINING BOOKLET.....$ 4.00

Explains the History of the Cleaner Air System up to the Present Time. Theory, Testing, and operation of each system is covered.

EVOLUTION OF THE CLEANER AIR SYSTEM

FILMSTRIP AND RECORD. CHRYSLER
(71-10).....$7.00
STUDENT REFERENCE BOOK.....$2.00

Background Theory & Information on the Development of Chrysler's Cleaner Air System.

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SERVICING EMISSION CONTROLS

INTERMEDIATE/ADVANCED. FILMSTRIPS & RECORDS CASSETTES. FORD
(0900-020) - - 3 FILMSTRIPS, 3 RECORDS...$29.85
- - 3 FILMSTRIPS, 3 CASSETTES.$29.85
- - STUDENT REFERENCE BOOK....$4.80

A 3 part course, graded from Basic through Advanced. Part 1: Ecological need for controls, need for proper servicing, nontechnical methods of checking and servicing emission systems. Part 2: Use of instrumentation in diagnosis and repair. Part 3: Repair & replacement of valves and control devices; in depth discussion of emissions & smog.

EMISSION CONTROLS - THERMACTOR SYSTEM

INTERMEDIATE/ADVANCED. STUDENT REFERENCE BOOK. FORD
(0900-004).....$3.25

Discusses the supplementary air injection system used on many vehicles 1967-71. Emphasis is on servicing the air pump.

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EMISSION CONTROLS - DISTRIBUTOR MODULATOR SYSTEM

INTERMEDIATE/ADVANCED. FILMSTRIP & RECORD. REFERENCE BOOK. FORD
(0900-005).....$9.95
.....$3.25

Discusses the functioning and construction of the ignition timing control system used in 1970-71 vehicles. This is the predecessor of today's ESC systems. Emphasizes diagnostic, adjustment and repair procedures.

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EMISSION CONTROL - EGR AND DVB SYSTEMS

ADVANCED. 2 FILMSTRIPS & 1 RECORD. 2 STUDENT REFERENCE BOOKS. FORD
(0901-012).....$12.40
.... 2 REF. BOOKS.....$ 6.50

Discusses EGR (Exhaust Gas Recirculation) and DVB (Delayed Vacuum Bypass) systems used in 1973 models. Covers construction and functioning plus diagnostic procedures and repair

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FUEL & EMISSION

Emission Control - Diagnosis of Driveability Problems

ADVANCED. FILMSTRIP & RECORD. DIAGNOSIS GUIDES (10)
STUDENT REFERENCE BOOK. FORD
(0901-220).....$9.95
GUIDES..... $1.00
(0901-222)REF.BOOK..... $4.80

Discusses some common complaints on recent models relative to cold starting, stalling & driveability. Covers time-saving diagnostic procedures and sequences for identifying specific causes of various symptoms.

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Emission Systems - Carburetor Adjustments

ADVANCED. FILMSTRIP, RECORD, STUDENT REF. BOOK
FORD
(0901-301).....$9.95
REF. BOOK.....$3.25

Discusses the various adjustments applicable to the carburetor models used on 1972 Ford cars in relation to correct functioning of the emission control systems and to optimum driveability. Emphasizes most effective sequence of adjustments.

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Emission Systems - Maintenance

ADVANCED. FILMSTRIP, RECORD, STUDENT REF. BOOK
FORD
(0901-302).....$9.95
REF. BOOK.....$3.25

Discusses the periodic maintenance operations which are essential to continued effectiveness of emission controls with optimum driveability. Describes maintenance procedures. Emphasizes importance of correct sequence.

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Gasoline Engines - Principles of Operation

INTERMEDIATE/ADVANCED. 2 FILMSTRIPS & 2 RECORDS,
STUDENT REFERENCE BOOK. FORD
(2101-120).....$19.90
REF. BOOK.....$ 3.25

Discusses all the systems of the basic piston engine, i.e. induction, compression, exhaust, valve train and camshaft, lubrication, cooling, crankcase ventilation. Ignition and carburetion are covered only to the extent necessary to explain functioning. Covers typical construction and relates it to functioning.

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Gasoline Engines - Piston Ring Problems

ADVANCED. FILMSTRIP AND RECORD, STUDENT REF. BOOK
FORD
(2101-501).....$9.95
REF. BOOK.....$3.25

Discusses tests and repair procedures for some common complaints relative to pistons, rings, and cylinder bores.

* * * *

FUEL & EMISSION

The Fuel System

MULTICOLORED TRANSPARENCIES WITH OVERLAYS.
EALING SCIENTIFIC (MEGATECH)
AM-1 FUEL SYSTEM-DIFFERENT UNITS OF THE SYSTEM INDICATED
AM-3 CARBURETOR CIRCUITS-ILLUSTRATED & LABELED
AM-4 CARBURETOR CIRCUITS-ACCELERATING DURING, AND AFTER PUMP DISCHARGE
AM-2 CARBURETOR CIRCUITS-ACTION DURING THE OPERATION OF THE POWER SYSTEM
AM-45 CARBURETOR CIRCUITS-FUEL FLOW AND AUTOMATIC CHOKE OPERATION
AM-25 THE MECHANICAL FUEL PUMP
COMPLETE SET.....$31.85

* * * *

Fuel System And Carburetion

INTERMEDIATE/ADVANCED. FILMSTRIP, 2 RECORDS, STUDENT REFERENCE BOOK. FORD
(2400-015).....$9.95
REFERENCE BOOK.....$3.70

Discusses the principles of basic carburetion, supported by the fuel and air systems. Component details, purpose, and function are thoroughly covered.

* * * *

Carburetor

SINGLE VENTURI. ADVANCED. STUDENT REFERENCE BOOK. FORD
(2403-001).....$3.70

Discusses a more modern single venturi design now used as a service replacement on older models.

Carburetor

FOUR VENTURI - MODEL 4300. ADVANCED. FILMSTRIP & RECORD. STUDENT REFERENCE BOOK. FORD
(2421-001).....$9.95
REFERENCE BOOK.....$3.70

Discusses the construction and functioning of a more modern four venturi design. Includes disassembly, overhaul and assembly adjustments.

* * * *

Cooling System

PRINCIPLES OF OPERATION, DIAGNOSIS, MAINTENANCE BASIC. FILMSTRIP AND RECORD
(2700-001).....$9.95
TRANSPARENCIES (21) AND INSTRUCTOR NOTES
(2700-002).....$25.00
NOTES ONLY
(2700-003).....$5.35

Discusses functioning of car and truck cooling systems and covers diagnosis and maintenance. Also describes thermostatic controlled fan drives, automatic radiator shutters. etc.

* * * *

Fuels, Lubricants, And Fluids

FILM STRIP AND RECORD, STUDENT REFERENCE BOOK CHRYSLER
(71-5).....$7.00
STUDENT REFERENCE BOOK.....$2.00

Discusses the Basic Theory Behind Engine Fuels, Lubricants, Additives and Other Fluids.

FUEL & EMISSION

EXHAUST EMISSION CONTROL AND AIR INJECTION

COLOR FILMSTRIP (34 FRAMES), AUDIO CASSETTE AND WORKSHEET. OMG
TL-11B.....$22.00

This book explains the function of each system component individually and how all these work together. Covers testing and diagnosis and system service. Emphasis is placed on testing anti-backfire valves.

* * * *

SMOG EMISSION CONTROL AND VENTILATION

8 MODULES. HOFFMAN
(32-0402)PER MODULE.....$27.50
SLIDE SET.....$36.50

		FRAMES	TIME
2.8.A	EMISSION CONTROL SYSTEMS	49	16:04
2.8.B	EXHAUST EMISSION CONTROL AIR INJECTION	43	12:12
2.8.C	EXHAUST EMISSION CONTROL: ENGINE MODIFICATION SYSTEMS	33	9:47
2.8.D	EXHAUST EMISSION CONTROL: EVAPORATIVE CONTROL SYSTEMS	29	8:17
2.8.E	EXHAUST EMISSION CONTROL: POSITIVE CRANKCASE VENTILATION SYSTEMS	34	9:48
2.8.F	THERMOSTATIC VACUUM CONTROL VALVES	20	6:00
2.8.G	USE OF EXHAUST ANALYZER	29	7:27
7.5.A	CARBURETOR AIR CLEANER THEORY	17	3:20

TOTAL: NO. FRAMES 254/TIME 1 HR. 12:55 MIN.

ENGINE AND FUEL SYSTEMS, SECOND EDITION

TRANSPARENCIES 1976. CROUSE. MCGRAW-HILL
(14680-2).....$93.50 NET.

A nine-unit set covering engine and fuel system construction and operation.

* * * *

FUEL PUMPS

2 MODULES. HOFFMAN
(32-0414) PER MODULE.....$27.50
SLIDE SET.....$36.50

		FRAMES	TIME
7.4A	FUEL PUMP VACUUM PRESSURE AND FUEL FLOW TEST PROCEDURE	17	4:39
7.4B	FUEL PUMP REMOVAL & REPLACEMENT	17	4:09

TOTAL: NO. FRAMES 34/TIME7:48 MIN.

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THE FUEL SYSTEM

OVERHEAD TRANSPARENCIES. 1972. MEDEX
AM-1 UNITS OF FUEL SYSTEM CARBURETOR CIRCUITS.....$5.00
AM-3 PARTS AND SYSTEM.....$10.50
AM-4 ACCELERATION DURING PUMP DISCHARGE$5.75
AM-2 ACTION DURING OPERATION OF THE POWER SYSTEM.....$5.00
AM-45 FUEL FLOW AND CHOKE.....$3.25
AM-25 MECHANICAL FUEL PUMP.....$3.85
COMPLETE SET.....$33.00

FUEL & EMISSION

FUNDAMENTALS OF AUTOMATIC TRANSMISSION

125 SLIDES, TRAINING BOOKLET, INSTRUCTOR'S GUIDE
CHRYSLER
(TM-508).....$62.50
TRAINING BOOKLET.....5.00
INSTRUCTOR'S GUIDE.....

Explains the Theory, Operation, Testing and Diagnosis of the Torque-Flite Transmission.

* * * *

FOUR-SPEED AUTOMATIC TRUCK TRANSMISSION

82 SLIDES, TRAINING BOOKLET, CHRYSLER
(TM-400).....$41.00
TRAINING BOOKLET.....$ 4.00

Covers the Basic Construction, Theory of Operation Testing and Diagnosis of the A-345 Four-Speed Automatic.

* * * *

CLEAN AIR THAT ENGINES MAY LIVE

16MM. FILM.(COLOR) WITH OPTICAL SOUND TRACK.
JOHN DEERE
(SX-1073).....$75.50 POSTPAID

(Air intake and cleaning systems)

EFFICIENT COOLING SYSTEMS THAT ENGINES MAY LIVE

(SX-1074).....$60.75 POSTPAID

FUNCTION OF LUBRICATION THAT ENGINES MAY LIVE

(SX-1075).....$54.50 POSTPAID

CLEAN FUEL THAT ENGINES MAY LIVE

(SX-1076).....$63.00 POSTPAID

SET OF FOUR FILMS ABOVE
(SX-1077).....$213.25 POSTPAID

The above four films run from 12 to 16½ minutes in length.
Note:
All four of the film subjects listed on engine maintenance can be purchased on a single 60-minute ¾-inch color video cassette with sound. Savings are more than $150.00 versus film prices and color on cassette is top quality, since films were shot originally on videotape and then transferred to film.

(VTR-U72049).....$54.00 PP.

* * * *

AIR CONDITIONING

INSTRUMENT PANEL - GAUGES, WARNING LIGHTS AND BUZZER SYSTEMS

ADVANCED. FILMSTRIP AND RECORD, STUDENT REFERENCE BOOK. FORD
(3300-110).....$9.95
REFERENCE BOOK.....$3.25

Covers principles of operation and diagnostic procedures for instrument panel gauge circuits, warning light systems, and buzzer warning systems.

AIR CONDITIONING

Air Conditioning - How It Works

ADVANCED. FILMSTRIP AND RECORD, STUDENT REFERENCE BOOK. FORD
(3630-101).....$9.95
STUDENT REF. BOOK.....$3.70

Very basic presentation of the construction & functioning of an air conditioning system.

* * * *

Air Conditioning - Principles Of Operation

ADVANCED. TRANSPARENCIES (26) AND INSTRUCTOR NOTES FORD
(3630-104).....$30.00

Covers basic operating principles of a refrigerant system and discusses the major components.

* * * *

Fundamentals Of Automotive Air Conditioning

39 SLIDES. TRAINING BOOKLET. CHRYSLER
(TMJ-101).....$19.50
TRAINING BOOKLET.....$ 2.00

Explains the Basic Fundamentals, and Theory for the Understanding of Automotive Air Conditioners.

* * * *

Principles Of Operation

1975 AUTO TEMP 11. 37 SLIDES, TRAINING BOOKLET CHRYSLER
(TM-509).....$18.50
BOOKLET.....$ 2.00

Covers Operation, Testing, Diagnosis, and new Components of the 1975 Auto Temp 11 System.

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Heating and Air Conditioning - Diagnosis, Adjustment and Repair

ADVANCED. FILMSTRIP AND RECORD. FORD
(3630-220).....

Covers diagnostic and testing procedures for most frequent heating and air conditioning complaints including ATC Systems, and servicing procedures for frequently performed maintenance and minor repairs.

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Air Conditioning Systems - Refrigeration

ADVANCED. 169 PAGE INSTRUCTOR GUIDE, 96 35MM. SLIDES, STUDENT REFERENCE BOOK. FORD
(3631-103).....

A complete manual on automotive air conditioning systems. Covers the theory of air conditioning, a description of system components, service and maintenance procedures, trouble-shooting and the overhaul of Frigidaire, Air Temp, York and Tecumseh compressors.

* * * *

Air Conditioning Control Systems

ADVANCED. 109 PAGE INSTRUCTOR GUIDE. 60 35MM. SLIDES. STUDENT REFERENCE BOOK. FORD
(3640-003).....$124.50
STUDENT REF. BOOK.....$ 3.95

AIR-CONDITIONING

Covers the basics of air conditioning-heating systems and vacuum/electrical systems for air conditioner controls. Includes a section on troubleshooting and the functioning of automatic temperature control systems.

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Air Conditioning - XII

OVERHEAD TRANSPARENCIES, 1972. MEDEX
AM-87 TYPICAL INSTALLATION.....$4.45
AM-88 REFRIGERATION CYCLE.....$5.25
AM-89 PERIODIC INSPECTION.....$3.25
AM-90 EVACUATION & CHARGING.....$5.75
AM-91 RECIPROCATING COMPRESSOR.....$3.25
AM-92 ROTARY AIR COMPRESSOR.....$4.45
AM-93 VARIABLE SPEED FANS.....$2.10
COMPLETE SET.....$27.75

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Automobile Air Conditioning - XII

MULTI-COLOURED TRANSPARENCIES WITH OVERLAYS.
EALING SCIENTIFIC (MEGATECH)
AM-87 A TYPICAL INSTALLATION
AM-88 REFRIGERATION CYCLE
AM-89 PERIODIC INSPECTION
AM-90 EVACUATION & CHARGING
AM-91 A RECIPROCATING COMPRESSOR
AM-92 A ROTARY AIR COMPRESSOR
AM-93 VARIABLE SPEED FANS.
.....$27.15

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Automotive Air Conditioning

MODEL 223.
OMNIDATA
.....$3,995.00

Offers suction, discharge and evaporator pressure gauges, dynamic leak detector, outside air temperature control, louver temperature thermometer, adjustable temperature control, refrigerant control, outside air relative humidity control, sun load control, three speed fan switch, dynamic sight glass, engine speed control, LPCO switch, condenser air flow control, air flow checks, built in voltage and continuity tester.

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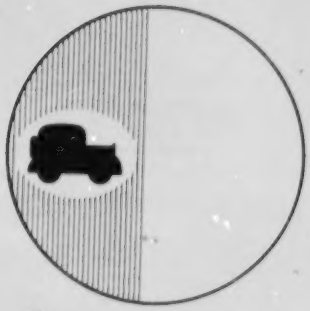

ELECTRICAL AND AUXILIARY SYSTEMS

SYSTÈMES ÉLECTRIQUES ET AUXILIAIRES

FUNDAMENTALS

AUTO ELECTRONICS SIMPLIFIED
CLAY HALLMARK. 1974.256PP. 202 ILL. TAB BOOKS
(749) PAPER.....$5.95
HARDBOUND.....$8.95

Complete Guide to Service/Repair of Automotive Electronic Systems. A thorough coverage of auto electronics, including every circuit to be found in a car - detailed circuit descriptions and servicing procedures for ignition and charging systems, safety and security systems, radios and tape players, antiskid systems, emission control & performance devices, onboard computers, test instruments, etc.
CONTENTS: Electronic Charging Systems; Electronic Ignition Systems; Safety Group; Emissions & Performance Group; Radios & Tape Players; Comfort and Convenience Group; Automotive Test Equipment; Computers & Cars Today; Computer Basics; Advanced Automotive Technology.

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AUTOMOBILE ELECTRONICS SERVICING GUIDE

A.C. SIMMONDS
(0-672-20927-6).....$5.95

The book starts with a review of superheterodyne theory, and goes on to step-to-step information on circuits, stages, and sections of complete tape players (cassette and eight-track), as well as fm, fm-stereo, and am radio.

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AUTOMOTIVE BASIC ELECTRICITY & SIX-STEP TROUBLE SHOOTING PROCEDURE

MONTE BRANDMAN. 1974. 238PP. ILL. SECOND EDITION
MCGRAW-HILL
(07130-2).....$4.35

This programmed text presents an approach to the study of automotive electricity. Divided into four chapters, it covers current flow, voltage, current and resistance, the function and schematic symbols of electrical components, and the elements of a logical troubleshooting procedure. It may be used for home study or as a supplement to the Automotive Electrical Diagnosis & Troubleshooting Program by Monte Brandman and Automotive Electrical Equipment by Crouse.
CONTENTS: Electron Theory; Fundamentals of Electricity; Circuit Symbols and Component Functions; The Six-Step Troubleshooting Procedure.

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AUTOMOTIVE ELECTRICAL DIAGNOSIS AND TROUBLE SHOOTING PROGRAM

MONTE BRANDMAN. 1972. MCGRAW-HILL
TEST METER CONSOLE
(09795-X).....$302.00
BREADBOARD
(09796-8).....$181.50
HORN CIRCUIT SIMULATOR
(09798-4).....$181.50
BACK-UP LAMP CIRCUIT SIMULATOR
(09797-6).....$181.50
MALFUNCTION CARDS
(09799-2).....$ 27.50
ALL SIMULATION MATERIALS ABOVE
(09785-2).....$874.50
TEXT-WORKBOOK
(09784-4).....$ 7.65
INSTRUCTOR'S GUIDE
(09788-7).....$ 7.15
OVERHEAD TRANSPARENCIES
(09787-9).....$ 77.00
WALL SIZE WIRING DIAGRAM
(09786-0).....$ 27.50
WORKSHEETS (PAD OF 50 FORMS)
(09789-5).....$ 2.15

This instructional system is designed to make students experts in diagnosing and troubleshooting complex automotive electrical problems. It teaches basic concepts of electricity and electronics. Major components are a block diagram schematic which illustrates the entire electrical system, three circuit simulation boards for troubleshooting, and a testing console. A set of 38 transparencies, an instructor's guide with fully developped lesson plans, and a student workbook are included. The student workbook contains 16 lessons, tests, and laboratory exercises. It covers the six-step

troubleshooting procedure, circuit symbols, and the major components of the automotive electrical system. Each lesson includes objectives for the lesson, step-by-step procedures, and a worksheet. Components may be purchased separately or as a total system and are available for a 45 day evaluation period.

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AUTOMOTIVE ELECTRICAL EQUIPMENT
WM. H. CROUSE. 1976. 416 PP. 8TH EDITION. MCGRAW-HILL
(14666-7).....IN PRESS
WORKBOOK
(14688-8).....IN PRESS
TRANSPARENCIES, 1971
AUTOMOTIVE ELECTRICAL SYSTEMS
(14676-4).....$93.50

This book provides automotive students with comprehensive information on the fundamentals of automotive electrical systems, including their construction, operation and maintenance. Examples of material added to this new edition are a chapter on integrated circuits and electrical devices and the latest information on no-service storage batteries with built-in charge indicators. CONTENTS: The Language of Electricity; The Storage Battery; Battery Service; Starting Motor Fundamentals; Starting Motor Trouble; Starting Motor Service; Automotive Charging Systems; Alternator and AC Regulator Trouble Diagnosis; AC Regulator Service; Alternator Service; The Gasoline Engine & Fuel Requirements; The Ignition System; Ignition Trouble Diagnosis and Tests; Ignition Distributor Service; Electric Circuits & Lights; Horns and Horn Relays; Seat Belt Electrical Controls Indicating Devices; Other Electrical Equipment; etc.

THE AUTOMOTIVE ELECTRICAL SYSTEM
BRODHEAD-GARRETT
(350844).....$12.50

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AUTOMOTIVE ELECTRICAL SYSTEMS
W.E. BILLIET AND L.F. GOINGS. 1973. 393PP. ILLUS.
GENERAL PUBLISHING
.....$9.50
STUDY GUIDE.....$2.25

This book covers Principles of Electricity for the beginner and it is a beneficial review for the advanced student. Special attention is given to locating trouble and repairing it systematically.

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AUTOMOTIVE ELECTRICAL SYSTEMS
HERBERT ELLINGER. 212PP. SOFTCOVER. PRENTICE-HALL
.....$8.95

This book is designed to help the automotive technician understand how automotive electrical systems work and how to test & service them. Many illustrations & photographs.

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AUTOMOTIVE ELECTRONICS
RUDOLF GRAF & GEORGE J. WHALEN. 320PP. SOFTBOUND. 5½ X 8½. A.C. SIMMONDS
(0-672-20856-3).....$8.35

This text embraces the application of all types of electrically operated components, either alone or in combination with hydraulic, pneumatic or mechanical components, to form a working system that

achieves a needed vehicular function.
CONTENTS: Starting system; Charging system; Ignition system; Lighting & signaling system; Sensor instruments and indicators; Antiskid braking systems; Emission control systems; Electronically controlled fuel injection; Speed control systems.

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AUTOMOTIVE ELECTRICIAN

1971. FIRST EDITION. INDUSTRIAL EDUCATION
STUDY GUIDE & UNIT TESTS.....$6.00
ANSWER BOOK.....$3.00

Fundamentals of electricity, generators, cranking motors, storage batteries, ignition, headlights, horns, switches and accessories are dealt with in the 11 units. Of the 48 assignments, 47 are based on Crouse, Automotive Electrical Equipment, 6th ed., 1966, Mcgraw-Hill. The assignment on safety is based on Glenn, Automechanics, 2d. ed., 1969 Chas A. Bennett.

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AUTOMOTIVE STARTING AND CHARGING SYSTEMS

DWIGGINS. SOFTCOVER. 280PP. ILLUS. VAN NOSTRAND REINHOLD
(0030-1).....$6.45
INSTRUCTOR'S GUIDE
(0031-X).....$1.90

This book is designed to give basic knowledge in automotive electricity, theory & service procedures as related to the battery and charging and starting circuits. This instructional material provides information basic to all types of automotive electricity.

CONTENTS: Direct Current Fundamentals; Storage Batteries; Generators and Generator Regulators; Service Procedures to: Test - Generator circuits; Starter, Current; resistance; draw; Battery; Alternator; all models; Check D-C components; Test alternator regulators - major models; Test and recondition armatures, fields, rotor, stator; Check diodes; Rebuild starter, generator; Test starter switch; Rebuild major model alternators Check and adjust generator & alternator regulators; Activate battery; Charge Battery. Glossary.

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CAR ELECTRICAL HANDBOOK

1975. HAMLYN
.....$3.95

This handbook explains the functioning of the complete electrical system and pays attention to the practical servicing, maintenance and repair of its various components. There is useful guidance on improving a car by installing additional lamps, radio instruments etc. Sections cover electrical terms & basic theory, wiring system, generator & charging circuit, batteries, starter system, ignition system, engine auxiliaries & instruments, lighting and signalling, accessories and practical repair work.

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THE COMPLETE AUTO ELECTRIC HANDBOOK

CLAY HALLMARK. 1974. 210PP. 139 ILLUS. TAB BOOKS
(748) PAPER.....$5.95
HARDBOUND.....$8.95

A self-teaching course that explains how the car's electrical system works and how to repair it.

FUNDAMENTALS

This book makes electrical principles crystal-clear. The first Chapters present electrical concepts and magnetic phenomena. A large number of time-saving analysis & servicing techniques are included in coverage on test instruments. AC and DC charging systems, starters, ignition systems, lighting systems, automotive accessories & the specifics of electrical repair.
CONTENTS: Electrical Terms & Symbols; Circuit Requirements; Batteries; How Magnets Make Currents; Testers & Tests; Charging Circuit; Starting System; Ignition & Lighting System; Instruments & Gauges; Automotive Accessories; Wiring Repairs; Parts List.

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ELECTRICAL SYSTEMS

236PP. 428 ILLUS. THREE COLORS. 8½ X 11 INCH SIZE WITH SOFTCOVER. JOHN DEERE. FOS
SINGLE COPY.....$6.85
10 OR MORE.....$5.15
(ORDER FOS -20B)

This text starts with basic theory using simple diagrams in color. It compares the many types of circuits & components, and covers both generators & alternators plus the new transistorized regulators. Explains how to maintain circuits for safety and long service. It gives the whole story on troubleshooting & testing. The book defines various electrical terms and symbols and has spot tests at end of each chapter.
CONTENTS: Basic Principles; Basic Circuits; Testing Equipment; Storage Batteries; Charging Circuits; Starting Circuits; Ignition and Lighting Circuits; Accessory Circuits; Maintenance; Troubleshooting; Terms and Symbols.

* * * *

ELIMINATING ENGINE INTERFERENCE

(0-672-21004-5).....$5.40

This book presents the causes and cures of noise in mobile communications receivers. It explains how the electrical system of an engine creates radio interference and what steps can be taken to reduce it at the source.

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TUNE-UP SERVICE

2ND. EDITION. 8½ X 11. 74PP. SOFTBOUND
A.C. SIMMONDS
(0-672-20997-7).....$6.45

This text on tune-up and high performance maintenance contains the latest testing, diagnosis & trouble-shooting procedures. It features service, use and and adjustment of transistor ignition systems, electronic diagnosis & test equipment, "black-box" centralized control etc. Since the days of the simple "plug, point, and condenser" tune-ups are gone, automotive instructors and students must remain abreast of the emerging technologies that help monitor, control and ensure high performance of modern automotive engines.
CONTENTS: Filters; Battery; Charging System; Distributor; Engine mechanical tests; Fuel system; Fusible links; Ignition system; Manifold heat control PCV system; Spark plugs; Transistor ignition; Troubleshooting; Tune-up Procedure; Valve Service.

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FUNDAMENTALS

Workbook For Automotive Electrical Equipment

WM. H. CROUSE & DONALD L. ANGLIN. 1976. 128PP.
MCGRAW-HILL
(14688-8).....IN PRESS

Correlated with Automotive Electrical Equipment, Eighth Edition, this workbook is a combination shop guide, study guide, notebook and study-progress report that covers the basic automotive electrical jobs. Hands-on shop jobs & laboratory exercises familiarize students with construction, operation and maintenance of automotive electrical equipment.
CONTENTS: Automotive Wiring & Electrical Symbols; Servicing & Charging Batteries; Testing Storage Batteries; Testing Starting Motors; Rebuilding Starting Motors; Inspecting DC Charging Systems; Checking AC Charging Systems; Alternator Disassembly and Assembly; Checking Alternator Rotor Stator and Diodes; Ignition System Components; Inspection Distributor Cap, Rotor and Spark Plug Wires; Replacing, Adjusting Distributor Points & Condenser. Distributor Removal & Installation; Distributor Disassembly & Assembly; Using Distributor Tester; Adjusting Ignition Timing; Operation & Testing the TCS System; Testing Ignition System with Oscilloscope; Operation & Testing of Chrysler Electronic Ignition; Spark Plug Service; Ignition Trouble Diagnosis; Checking Turn Signals & Emerg. Flasher systems; Head light Aiming Horn Checks & Adjustments; Checking Inst. Panel; Indicating Devices; Radio Trouble Diagnosis; Diagnosing the Heater; Engine will not Turn Over; Engine Turns Over but Does Not Start; Engine Runs but Misses.

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IGNITION

Peterson Action Library

BASIC IGNITION AND ELECTRICAL SYSTEMS NO. 4
GENERAL PUBLISHING
(2203 631).....$3.50

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Ignition Manufacturers Institute - Automotive Emission Control and Tune-Up Procedures

284PP. 1972. PRENTICE-HALL
(013-054833-2).....$12.95

This book presents both the fundamental theory & the advanced procedural techniques necessary to qualify the automotive technicians to meet the exacting demands made by today's industry.
Features every phase of tune-up from basic electricity to merchandise tune-up service. Explains system operation and test procedures for Exhaust Emission Control Systems- covers both the air pump afterburner-type systems and those employing engine modifications and recalibrated carburetors and distributors.
Contains a section on New Car Warranty Facts to inform both the tune-up specialist and the car owner of the terms governing new car warranties presently receiving so much attention in national advertising. Contains numerous charts and Illus. All illustrations are 8½ x 11 transparency masters.

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IGNITION

Solid-State Ignition Systems

RUDOLF F. GRAF & GEORGE J. WHALEN. 5½ X 8½. 136PP. SOFTBOUND. A.C. SIMMONDS
(0-672-21049).....$5.40

Gas shortages & pressure from environmentalists to clean up the air have made solid-state ignition systems a fact of life in the car of today. All the known, commercially available methods of solid-state ignition are explored in this book. For those interested in servicing solid-state ignition systems, a whole chapter is devoted to servicing and troubleshooting techniques. Car buffs will also enjoy this section as well as the discussion of fundamental ignition requirements.

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TESTING

Automotive Oscilloscope

WHITED. 88PP. 2 COLORS. 1972. SOFTCOVER.
VAN NOSTRAND REINHOLD
(0033-6).....$4.15

This instructional manual teaches the mechanic to read the oscilloscope, rather than to memorize a numerous amount of patterns. The technical workings of the scope are avoided.
CONTENTS: Automotive electrical review; Effect of resistance in the primary ignition circuit; Effect of resistance in the secondary ignition circuit; Primary ignition system components; Operation of the primary circuit; Secondary ignition system components and operation of this secondary ignition circuit; Automotive oscilloscope basics; Secondary super-imposed patterns; Primary super-imposed patterns; Display patterns; Raster patterns; Test procedures.

Testing Procedures for Automotive AC and DC Charging Systems

JOHN D. GREVICH. 1972. 240PP. MCGRAW-HILL
(24673-4).....$8.55

This manual describes procedures for testing, diagnosing and adjusting alternation and direct current charging systems, beginning with the storage battery. Tests stress accuracy and are designed for a minimum of physical labor. Clear illustrations are featured. Procedures include step-by-step explanations and point out hazards.
CONTENTS: Preliminary notes and tests; Test equipment symbols & abbreviations; Testing notes; Storage battery and circuit tests; Alternating current(AC) Charging systems; Troubleshooting; Auto-Lite Ford alternator charging systems; Chrysler Alternator charging systems; Delco-Remy alternator charging systems; Leece-Neville alternator charging systems; Motorola alternator Charging systems; Prestolite alternator systems; DC Charging systems; Troubleshooting; Regular unit description; Types of circuits and polarizing; Charging system tests. Third-Brush Generators.

* * * *

Using Electronic Testers For Automotive Tune-Up

ALBERT WANNINGER. 1972. 252PP. 226 ILLUS.
TAB BOOKS
(604) PAPER.....$4.95
HARDBOUND.....$7.95

Provides complete info and operating instructions on all electronic devices for auto tune-up. Completely covers the subject from basics through more sophisticated devices. Starts with simple voltage and continuity checks, and continues on

through more sophisticated procedures using oscilloscopes, specialized testers, and complete automotive tune-up with console type analyzers. Stresses interpretation of test results, and explains why electronic test equipment is rapid and valuable in ignition analyzing. Shows how to save time by using electronic diagnosis to deduce causes from effects, such as in checking compression without removing a spark plug.
CONTENTS: Voltmeter and Ohmmeter Tests; Battery; Charge Tester; Charging System Analyzers; Tachometers and Dwell Meter; Timing Lights; Ignition Advance Testers; Ignition Testers: Ignition Oscilloscopes; Electronic Compression Testers; Vacuum Gauges; Exhaust Gas Analyzers; Specialized Testers and Diagnostic Equipment; Glossary.

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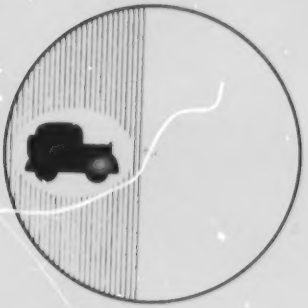

ELECTRICAL AND AUXILIARY SYSTEMS

SYSTÈMES ÉLECTRIQUES ET AUXILIAIRES

FUNDAMENTALS

ELECTRICAL SYSTEMS IN THE DODGE TRUCK LINE-ELECTRONIC IGNITION SYSTEM

56 SLIDES CHRYSLER
(81-355-0120).....$28.00
TRAINING BOOKLET.....$ 2.00

Explains the Principles of Operation, Testing and Troubleshooting the System.

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'75 WIRING DIAGRAMS

TRAINING BOOKLET. CHRYSLER
.....$2.00

Complete Schematic Wiring Diagrams for all 1975 Models.

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FUNDAMENTALS OF ELECTRICITY AND BASIC PRINCIPLES OF THE ALTERNATOR

71 SLIDES. CHRYSLER
(81-960-0020).....$35.50
TRAINING BOOKLET & GUIDE.....$ 3.00, $2.00

Explains the Fundamentals of Electricity and how they pertain to Automotive Electrical Systems.

* * * *

ELECTRICAL SYSTEMS IN THE DODGE TRUCK LINE-HEAVY DUTY CHARGING SYSTEMS.

59 SLIDES. CHRYSLER
(81-355-0101).....$29.50

TRAINING BOOKLET.....$2.00

Explains the Theory, Operation, Testing and Troubleshooting of all components used in Dodge Truck Heavy Duty Operation.

* * * *

MOTOR HOME ELECTRICAL SYSTEMS

118 SLIDES. CHRYSLER
(TM-403).....$59.00
TRAINING BOOKLET.....$ 3.00
INSTRUCTOR'S GUIDE.....$10.00

Covers the complete line of Recreational Vehicle Electrical Systems: Theory, Operation and Testing.

* * * *

SPEED CONTROL AND CONCEALED HEADLIGHTS

FILMSTRIP AND RECORD. CHRYSLER
(72-9).....$7.00
STUDENT REFERENCE BOOK.....$2.00

Explains Theory of Operation & Servicing Procedures for both systems.

* * * *

ELECTRONIC IGNITION SYSTEM - PASSENGER CAR

56 SLIDES. CHRYSLER
(TMJ-106P).....$28.00
TRAINING BOOKLET.....$ 2.00

Explains Principles of Operation, Testing & Troubleshooting the system.

FUNDAMENTALS

ELECTRICAL SYSTEMS

SLIDE SET. 295 SLIDES IN COLOR (35MM.)
DEERE. FOS
COMPLETE SET.....$98.75

A comprehensive slide set of the illustrations in the "Electrical Systems" manual. Slides are in the same sequence as in the manual. For use in classroom with "Electrical Systems" manual as students' test.

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ELECTRICAL SYSTEMS

TRANSPARENCY MASTERS. 190 MASTERS ON HEAVY 8½ X 11 SHEETS. BLACK & WHITE WITH FOLDER.
DEERE. FOS
COMPLETE SET.....$21.00

A complete set selected from key illustrations in the "Electrical Systems" manual. For use in classroom for making transparencies, work sheets, or both. Illustrations for masters are bold with large captions and are on durable sheets. Folder included with tab for easy filing.

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THE ELECTRICAL SYSTEM - GROUP III

MULTICOLOURED TRANSPARANCIES WITH OVERLAYS.
EALING SCIENTIFIC (MEGATECH)

AM-8 IGNITION SYSTEM
AM-9 SPARK PLUGS
AM-54 BREAKER PLATE INSTALLATION
AM-28 THE IGNITION DISTRIBUTOR
AM-29 THE IGNITION COIL & CONDENSER
AM-30 A STANDARD GENERATOR ASSEMBLY
AM-31 A STANDARD ALTERNATOR ASSEMBLY
AM-49 GENERATOR & CONVENTIONAL IGNITION
AM-50 ALTERNATOR & MAGNETIC PULSE IGNITION
AM-32 A STANDARD STARTING MOTOR
AM-51 BATTERY CONSTRUCTION
AM-52 BATTERY VISUAL CHECKS
AM-53 TEMPERATURE CORRECTED HYDROMETER
COMPLETE SET.....$51.00

* * * *

THE ELECTRICAL SYSTEM

FILMSTRIPS. MEDEX
COMPLETE SET.....$52.00
AM-8 IGNITION SYSTEM.....$ 4.90
AM-9 SPARK PLUGS.....$ 5.25
AM-54 BREAKER PLATE INSTALLING.....$ 3.85
AM-28 IGNITION DISTRIBUTOR.....$ 3.85
AM-29 IGNITION COIL & CONDENSER.....$ 2.25
AM-30 STANDARD GENERATOR ASSEMBLY.....$ 4.45
AM-31 STANDARD ALTERNATOR ASSEMBLY.....$ 3.85
AM-49 GENERATOR & CONVENTIONAL IGNITION$ 4.45
AM-50 ALTERNATOR & MAGNETIC PULSE IGNITION.....$ 4.45

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ELECTRICITY - FUNDAMENTALS

BASIC. TRANSPARENCIES (23) AND INSTRUCTOR NOTES.
FORD
(3000-105).....$29.95

Covers electron principle, various types of circuits, application of Ohm's Law and the production of electricity. Excellent for introductory course.

FUNDAMENTALS

ELECTRICITY - ELECTRIC CIRCUIT

FUNDAMENTALS. INTERMEDIATE/ADVANCED. FILMSTRIP & RECORD. FORD
(3000-206).....$9.95
PROGRAMMED INSTRUCTION BOOK.....$4.80

Discusses the basic construction of automotive electrical circuits including switches, connectors, splices, motors, etc. Relates these to resistance, voltage, current draw and describes use of meters to measure these factors in order to determine whether system functions correctly and to locate point of malfunction.

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BASIC ELECTRICAL THEORY & TEST EQUIPMENT

13 MODULES. HOFFMAN

(32-0403)		FRAMES	TIME
3.1.A	BASIC ELECTRON THEORY	24	5:30
3.3.A	PRINCIPLES OF MAGNETISM	32	10:00
3.4.A	VOLTAGE	21	6:30
3.4.B	CURRENT	17	6:00
3.4.C	RESISTANCE	16	5:00
3.6.A	ELECTRICAL CIRCUITRY	25	6:00
3.7.A	HOW TO READ ELECTRICAL WIRING DIAGRAMS	39	11:37
3.8.A	INTRODUCTION TO ELECTRICAL TESTING DEVICES	25	6:30
3.8.B	USE OF THE VOLTMETER	17	3:55
3.8.C	USE OF OHMMETER	32	9:45
3.8.D	USE OF TACH-DWELL PANEL	23	5:30
3.8.E	VOLT-AMP TESTER HOOKUP	16	2:30

TOTAL: NO. FRAMES 287/TIME 1 HR. 18:47 MIN.

TECHNAMATION
3.6.B SIMPLE ELECTRIC CIRCUIT

Each Technamation module consists of a single polarized slide which requires a polarizing device on the projector to simulate motion. Each is a special order.

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CARBURETION THEORY

7 MODULES. HOFFMAN

(32-0412)		FRAMES	TIME
7.1.A	CARBURETOR PRINCIPLES - FLOAT, FUEL INLET SYSTEM	10	1:30
7.1.B	CARBURETOR CIRCUITRY FUNCTION LOW SPEED CIRCUIT	16	4:00
7.1.C	CARBURETOR CIRCUITRY FUNCTION MAIN SYSTEM	9	3:05
7.1.D	CARBURETOR CIRCUITRY FUNCTION POWER SYSTEM	11	1:30
7.1.E	CARBURETOR CIRCUITRY FUNCTION ACCELERATOR PUMP SYSTEM	15	4:00
7.1.F	CARBURETOR CIRCUITRY FUNCTION CHOKE SYSTEM	13	3:04
7.5.A	CARBURETOR AIR CLEANER THEORY	17	3:20

TOTAL: NO. FRAMES 91/TIME 20:29 MIN.

TECHNAMATION
7.1.G FUEL FLOW

Each technamation module consists of a single polarized slide which requires a polarizing device on the projector to simulate motion. Each is a special order.

FUNDAMENTALS

CARBURETOR REMOVAL, CLEANING AND REPLACEMENT

8 MODULES. HOFFMAN
(32-0413)

		FRAMES	TIME
7.3.A	CARBURETOR REMOVAL ROCHESTER 4MV	12	2:50
7.3.B	CARBURETOR DISASSEMBLY & CLEANING ROCHESTER 4MV	33	7:05
7.3.C	CARBURETOR INSTALLATION AND ADJUSTMENT ROCHESTER 4MV	23	5:20
7.3.D-E	CARBURETOR ASSEMBLY AND ADJUSTMENT ROCHESTER 4MV	76	18:44
7.3.F	CARBURETOR OVERHAUL ROCHESTER MONOJET, SECTION A-DISASSEMBLY SECTION B-REASSEMBLY (SOLD AS 2 MODULES)	105	10:35
7.3.G	CARBURETOR OVERHAUL CARTER AFB SECTION A - DISASSEMBLY SECTION B - REASSEMBLY (SOLD AS 2 MODULES)	141	37:31
7.3.H	CARBURETOR OVERHAUL FORD 4300 SECTION A - DISASSEMBLY SECTION B - REASSEMBLY (SOLD AS 2 MODULES)	136	39:57
7.3.1	CARBURETOR OVERHAUL HOLLY 4150 SECTION A - DISASSEMBLY SECTION B - REASSEMBLY (SOLD AS 2 MODULES)	178	44:30

TOTAL: NO. FRAMES 704/TIME 2 HRS. 46:32 MIN.

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ELECTRICAL SYSTEM STARTING CIRCUITS

13 MODULES. HOFFMAN
(32-0405)

		FRAMES	TIME
4.7.A	STARTING CIRCUIT OPERATION	24	4:16
4.7.B	VISUAL INSPECTION OF STARTING CIRCUIT (AUDIO ONLY)		5:59
4.8.A	STARTING CIRCUIT VOLTMETER TEST	30	4:16
4.8.B	STARTER DRAW TEST	25	4:08
4.8.C	STARTER ARMATURE INSPECTION	27	4:24
4.8.D	STARTER FIELD & FRAME INSPECTION	29	5:22
4.8.E	STARTER COMMUTATOR END-HEAD INSPECTION	22	4:38
4.8.F	STARTER NO-LOAD TEST	21	4:07
4.8.G	STARTER REMOVAL & REPLACEMENT	25	4:12
4.9.B	BENDIX STARTER DRIVE	18	2:29
4.9.C	OVERRUNNING CLUTCH STARTER DRIVE	14	2:21
4.9.D-2	BENDIX DRIVE REMOVAL AND REPLACEMENT	24	4:41
4.9.E	OVERUNNING CLUTCH STARTER DRIVE REMOVAL & REPLACEMENT	26	3:35

TOTAL: NO. FRAMES 285/TIME 54:28 MIN.

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ELECTRICAL SYSTEM

6 MODULES. HOFFMAN

		FRAMES	TIME
5.1.B	DC GENERATOR, BENCH TESTS	36	7:07
5.1.C	DC GENERATOR OUTPUT TEST AND RESISTANCE	20	3:49
5.2.A	CUT-OUT RELAY ADJUSTMENT	36	5:56
5.3.A	CURRENT REGULATOR ADJUSTMENT	30	6:26
5.4.A	VOLTAGE REGULATOR ADJUSTMENT	27	6:06
5.6.A	REPLACE AND ADJUST FAN BELT	14	2:14

FUNDAMENTALS

TOTAL: NO. FRAMES 182/TIME 35:08 MIN.

TECHNAMATION
5.1.D DC CHARGING CIRCUIT

Each technamation module consists of a single polarized slide which requires a polarizing device on the projector to simulate motion. Each is a special order.

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ELECTRICITY - USE OF DIAGRAMS

INTERMEDIATE/ADVANCED. FILMSTRIP AND RECORD
FORD
(3000-207).....$9.95
PROGRAMMED INSTRUCTION BOOK.....$4.80
SAMPLE WIRING DIAGRAM.....$ .65

Discusses use of wiring diagrams to diagnose circuit malfunctions. Explains symbols used and describes simple techniques for tracing circuits, determining source of power, identifying grounding points, etc.

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ELECTRICITY - DIAGNOSIS

ADVANCED. FILMSTRIP AND RECORD. FORD
(3000-208).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Describes a technique of identifying and testing at common points which greatly speeds up electrical circuit diagnosis.

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AUTOMOTIVE ELECTRICAL SYSTEMS

TRANSPARENCIES. 1971. MCGRAW-HILL RYERSON 1976
CROUSE & HEISEL
(14676-4).....$93.50

Eight units illustrate the various electrical systems from storage batteries, cranking motors, charging systems, to engine and fuel indicators.

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AUTOMOTIVE TRANSPARENCIES SERIES

TRANSPARENCIES. GENERAL PUBLISHING
.....SUBSET A
$44.00 NET.
CHARGING CIRCUIT; CUTOUT RELAY; VOLTAGE REGULATOR; CURRENT REGULATOR; DC GENERATOR INTERNALLY-GROUNDED FIELD CIRCUIT; DC GENERATOR EXTERNALLY -GROUNDED FIELD CIRCUIT; ALTERNATOR; ALTERNATOR-CHARGING CIRCUIT; SPARK PLUG CONSTRUCTION; SPARK PLUG HEAT RANGE; CONDENSER CONSTRUCTION; SOLENOID, PICTORIAL; SOLENOID, SCHEMATIC; DIODE TESTING; MAGNETO IGNITION SYSTEM; BATTERY IGNITION SYSTEM.

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ANALYZING SECONDARY SCOPE PATTERNS

COLOR FILMSTRIP (34 FRAMES), AUDIO CASSETTE, WORKSHEET, JOB SHEET. OMG
(TM-55B).....$22.00

Actual photographs of many abnormal scope patterns. Includes high firing lines, low firing lines, reversed coil polarity, fouled plugs, secondary resistance, testing, testing available voltage, secondary insulation.

FUNDAMENTALS

Electrical Circuits

COLOR FILMSTRIP (22 FRAMES). AUDIO CASSETTE, WORK SHEET, POST TEST. OMG
(IM-2C).....$22.00

Describes series circuits, parallel circuits, voltage losses, and practical automotive electrical circuits.

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OHM'S Law

COLOR FILMSTRIP (32 FRAMES). AUDIO CASSETTE, PRE-TEST, INFORMATION SHEET AND WORKSHEET. OMG
(TM-2B).....$22.00

Describes voltage, amperage, and resistance in their most basic form. Ohm's Law is used to equate the relationships of these three circuits components. During the lesson the student is directed to work circuit problems using Ohm's Law.

* * * *

The Ohmmeter

COLOR FILMSTRIP (20 FRAMES). AUDIO CASSETTE, WORK-SHEET AND JOB SHEETS. OMG
(TM-6B).....$22.00

Describes the internal operation & safe use of an ohmmeter, with heavy emphasis on the difference between no resistance and infinite resistance. The student reads the ohmmeter scale on RX1, RX10 RX100, and RX1000, and then records his reading on the worksheet.

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Voltmeters and Ammeters

COLOR FILMSTRIP (29 FRAMES). AUDIO CASSETTE. WORKSHEET AND 2 JOB SHEETS. OMB
(TM-6A).....$22.00

Describes the internal operation of a voltmeter and ammeter, how to connect these instruments, use them safely and read the various scales of these instruments. The student takes meter readings and records them on his worksheet. This lesson is a must for students who have never used these instruments.

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ALTERNATOR

Charging Circuits - A.C. Alternator Theory & Testing

5 MODULES. HOFFMAN
(32-0407)

		FRAMES	TIME
5.8.A	A.C. GENERATOR CIRCUITS	26	9:00
5.8.B	A.C. GENERATOR BENCH TESTS	35	7:02
5.8.C	ALTERNATOR OUTPUT TEST & CIRCUIT RESISTANCE TESTS	49	10:06
5.9.A	ADJUSTMENT OF A.C. VOLTAGE REGULATOR	30	5:47
5.6.A	REPLACE & ADJUST FAN BELT	14	2:14

TOTAL: NO. FRAMES 154/TIME 34:09 MIN.

TECHNAMATION
5.8.D A.C. CHARGING CIRCUIT

Each Technamation module consists of a single polarized slide which requires a polarizing device on projector to simulate motion. Each is a special order.

ALTERNATOR

CHARGING CIRCUITS - D.C. GENERATOR THEORY & TESTING

7 MODULES. HOFFMAN

(32-0406)	FRAMES	TIME
5.1.A A AND B CIRCUITS	19	3:30

Theory of the two direct currents and an extensive explanation of testing and adjustment procedures on the related components.

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CHARGING SYSTEM - ALTERNATOR

DIAGNOSIS. ADVANCED. FILMSTRIP AND RECORD. FORD
(3101-208).....$9.95
PROGRAMMED INSTRUCTION BOOK.....$4.80

More detailed coverage of charging system diagnosis. Gives specific diagnosis procedures for many common charging system complaints and relates to the functioning of the system and its components. Explains how to make the various tests.

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CHARGING SYSTEM

DIAGNOSIS. ADVANCED. FILMSTRIP AND RECORD. FORD
(3101-209).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Provides detailed instruction for determining the cause of charging system problems and correcting them on Ford Motor Company vehicles.

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ALTERNATOR - DISASSEMBLY AND ROTOR TESTING

COLOR FILMSTRIP (21 FRAMES). AUDIO CASSETTE.
WORKSHEET. OMG
(TM-46A).....$22.00

Covers correct disassembly procedure and rotor field winding for shorts, opens, or grounds.

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ALTERNATOR - DIODE STATOR TESTING

COLOR FILMSTRIP (38 FRAMES). AUDIO CASSETTE.
WORKSHEET. OMG
(TM-46B).....$22.00

Covers diode rectifier testing in detail using two types of commercial diode testers. Demonstrates how to replace diodes and heat sinks. Includes testing stator windings for grounds and shorts using the current flow method.

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AUTO MECHANICS - THE ALTERNATOR, PART I

FILMSTRIPS. UNIVERSAL EDUCATION
(7781) ALTERNATOR SERVICE; DISASSEMBLY OF ALTERNATOR
(7782) REMOVING THE PULLEY
(7783) REMOVING THE ROTOR
(7784) TESTING THE STATOR AND ROTOR
(7785) TESTING DIODES
(7786) USING THE DIODE TEST
(7787) REMOVING THE DRIVE-END BEARING
(7788) THE DRIVE-END BEARING
COMPLETE SET OF 8 COLOR LOOPS.....$176.00

ALTERNATOR

AUTO MECHANICS - THE ALTERNATOR - PART II

FILMSTRIPS. UNIVERSAL EDUCATION
(7811) ALTERNATOR SERVICE:
REMOVING SLIP RING END FRAME BEARING
(7812) INSTALLING THE SLIP RING END BEARING
(7813) REPLACING THE DIODE
(7814) REPLACING BRUSHES
(7815) ASSEMBLING ROTOR TO FRAME AND PULLEY
(7816) ASSEMBLING THE ALTERNATOR
COMPLETE SET OF 6 COLOR LOOPS.....$132.00

This series of the above fourteen films - Auto Mechanics - The Alternator - Parts 1 & 11, depicts the disassembly, testing and assembly of the alternator. The attention of detail and use of close-up live action and over the shoulder shots puts the viewers into the picture as though they were performing the work. Where needed, sub titles are used to make special points or to clarify instruction. Throughout the series, use is made of common types of test equipment, and where needed, the special equipment used to perform the work.

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CHARGING SYSTEM - ALTERNATOR

PRINCIPLES OF OPERATION. INTERMEDIATE/ADVANCED. TRANSPARENCIES (11) AND INSTRUCTOR NOTES. FORD
(3101-105).....$18.00
(3101-106)NOTES ONLY.....$ 5.35

Discusses construction and functioning of automotive alternators.

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CHARGING SYSTEM - ALTERNATOR

DIAGNOSIS AND REPAIR. ADVANCED. TRANSPARENCIES (24) INSTRUCTOR NOTES. FORD
(3101-207).....$28.00
NOTES ONLY.....$ 5.35

Covers diagnostic procedures, adjustments for the charging system. Also discusses alternator overhaul.

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BATTERY

CHARGING SYSTEM - BATTERY

DIAGNOSIS. BASIC/INTERMEDIATE/ADVANCED. TRANSPARENCIES (7). INSTRUCTOR NOTES. FORD
(3102-003).....$15.00
NOTES ONLY.....$ 5.35

Discusses battery construction and functioning. Covers testing, charging, and maintenance.

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ELECTRICAL STORAGE SYSTEM

6 MODULES. HOFFMAN
(32-0404)

		FRAMES	TIME
4.2.A	HOW TO USE A BATTERY CHARGER	21	5:18
4.2.B	PROPER USE OF A BATTERY HYDROMETER	21	4:46
4.2.C	THREE MINUTE BATTERY CHECK	36	11:48
4.2.D	HIGH RATE BATTERY DISCHARGE TEST	24	4:27

BATTERY

4.3.A	BATTERY PREPARATION	15	2:38
4.4.B	BATTERY REPLACEMENT (AUDIO ONLY)		7:44

TOTAL: NO. FRAMES 117/TIME 36:41 MIN.

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BATTERY STARTER TEST

12 VOLT SYSTEMS. SUPER 8 FILM LOOPS. MEDEX
FAA262 LOAD TEST
FAA272 CHARGE-VOLTS TEST
FAA282 STARTER CURRENT DRAW TEST

ALTERNATORS (12 VOLT SYSTEMS):
FAA292 TESTING PROCEDURES - PART 1
FAA302 TESTING PROCEDURES - PART 11

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THE ELECTRICAL SYSTEM

MEDEX
AM-32 STANDARD STARTING MOTOR.....$3.85
AM-51 BATTERY CONSTRUCTION.....$3.85
AM-52 BATTERY VISUAL CHECKS.....$3.85
AM-53 TEMPERATURE CORRECTED HYDROMETER.....$3.85

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BATTERY TESTING

COLOR FILMSTRIP (24 FRAMES). AUDIO CASSETTE. WORKSHEET. 2 JOB SHEETS. OMG
(TM-12A).....$22.00

Describes battery ratings, specific gravity, and other related information. Emphasis on the Hydrometer Test and High-rate Discharge Capacity Test.

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BATTERY SERVICING

COLOR FILMSTRIP (28 FRAMES). AUDIO CASSETTE. WORKSHEET AND JOB SHEET. OMG
(TM-12B).....$22.00

Describes how to clean batteries and battery cables. Shows how to charge batteries and how to activate a dry charge, a process difficult to demonstrate in a school shop.

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IGNITION

IGNITION SERVICE

FILMSTRIPS. UNIVERSAL EDUCATION
(7901) WHAT IS TVRS WIRE
(7902) TESTING TVRS WIRE
(7903) INSTALLING TVRS WIRE TERMINALS
(7904) SPARK PLUG SERVICE
(7905) REMOVING CONTACT POINTS (EXTERNAL ADJUSTMENT TYPE)
(7906) INSTALLING EXTERNAL ADJUSTMENT TYPE CONTACT POINTS
(7907) REPLACING POINTS AND CONDENSER (PIVOTLESS TYPE PART 1)
(7908) REPLACING POINTS AND CONDENSER (PIVOTLESS TYPE PART 11)
COMPLETE SET OF 8 COLOR LOOPS.....$176.00

IGNITION

Ignition Scope Secondary Waveform

COLOR FILMSTRIP (28 FRAMES). AUDIO CASSETTE. WORKSHEET. POST-TEST. OMG
(TM-55A).....$22.00

A step-by-step presentation of an oscilloscope secondary waveform. Includes the firing line, spark line, intermediate section, point close signal, dwell line, and point open signal. The student draws each element of the waveform on his worksheet.

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The Ignition System (BW 602)

6 COLOR STRIPS AND TEACHER'S GUIDE. RECORDS. CASSETTES. OMG
602R 6 - 12" RECORDS.....$109.00
602C OR 6 CASSETTES.....$122.00

THE TITLES ARE:
1. OPERATION OF BASIC PARTS
2. THE DISTRIBUTOR AND TIMING MECHANISMS
3. STARTING PROBLEMS IN PRIMARY CIRCUIT
4. STARTING PROBLEMS IN SECONDARY CIRCUITS
5. HOW TO LOCATE AN ENGINE MISS
6. USE OF ELECTRICAL TEST EQUIPMENT

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Operation of Basic Parts

FILMSTRIPS. OMG

This filmstrip identifies three main functions of Ignition System and describes parts of Primary Circuit and Secondary Circuit. Then traces path of battery voltage through the Primary Windings of the coil to the Points; the Condenser; the Coil's Secondary Windings, the Coil Tower high tension wire, the Dictributor and its Cap; the Rotor, high tension wires and spark plug.

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The Distributor and Timing Mechanisms

FILMSTRIPS. OMG

Details the operation of the Distributor. Begins with gear drive attached to Camshaft. Describes parts and operation of Cam Assembly and Points. Defines Cam Angle. Explains Timing, Spark Advance and operation of Centrifugal advance mechanism. Details Vacuum Advance operations, and explains initial timing with timing light and how it's adjusted.

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IGNITION

Starting Problems in Primary Circuit

FILMSTRIPS. OMG

Begins by listing seven most common starting difficulties and running problems. Traces trouble in starting engine with battery, the starter circuit, using a Hydrometer and a Voltmeter. Shows how to clean a Battery and check it with a Voltmeter. It explains how to use a Current Indicator. Explains parts of Wiring Diagram. Details a troubleshooting procedure when engine cranks but doesn't start. Shows how to check grounded out Coil with 110 Volt

IGNITION

Test Lamp. Other ignition difficulties are checked with Voltmeter, Ohmeter and 12 Volt Test Light.

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THE IGNITION SYSTEM

FILMSTRIPS. OMG

Identifies five most common problems in secondary circuit. Describes maintenance of Soil - the Distributor Cap - the high tension Wires and Spark Plugs. Shows how to re-use a good spark plug. Explains spark plug heat ranges. Details problems from different engine temperatures - cylinder cross-firing - defective Distributor Cap. Defines "Ping" and "Dieseling" and their effects on Engine.

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HOW TO LOCATE AN ENGINE MISS

FILMSTRIPS. OMG

Defines an Engine "miss" at low speed and shows a procedure to find it. Identifies six most common ignition problems of an engine running at high speeds and how to correct each one. Concludes with introduction to Distributor Scope and Engine Analyzer.

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USE OF ELECTRICAL TEST EQUIPMENT

FILMSTRIPS. OMG

Shows testing techniques with ignition electrical devices. Details use of Distributor Scope and the

Engine Analyzer. Introduces the Oscilloscope - shows how to hook it up to engine - explains different spark patterns in primary and secondary circuits. Explains use of Timing Light and Tach and Dwell Meter.

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MAGNETO IGNITION SYSTEM

SLIDE SETS. 1973 SERIES. COLOR. OMG
(403).....$4.50

This series includes 69 colored slides covering the subject matter related to the small engine ignition system. The components of the ignition system and their function are discussed, beginning with the basic electricity related to ignition. Following the basic discussion, the complete magneto ignition cycle is covered for both the two and three legged armature systems. A 30 minute cassette tape and script are included.

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BATTERY IGNITION SYSTEM

SLIDE SETS. 1974 SERIES. COLOR. OMG
(405).....$4.50

This slide series includes 64 colored slides, a 34 minute cassette tape and a 10 page script. Principles and basic components of the battery ignition system and their function are discussed in depth. The complete battery ignition cycle is covered. Batteries and ignition timing advance devices are discussed. This series was developed for individual instruction for use in the auto or tractor service and maintenance unit.

IGNITION

Carburetor Laboratory

SLIDE SETS. 1973 SERIES. COLOR. OMG
(404).....$2.75

This slide series includes 56 colored slides and a 24 minute cassette tape covering the complete disassembly and assembly of small engine carburetion system. Emphasis is given to proper use of tools, basic function and adjustment of carburetor. The three common carburetors, Flo-Jet, Vacu-Jet and Pulsa-Jet are covered. Another individualized instructional tool for your mechanics program. Two worksheets on carburetors are available.

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Magneto Ignition Laboratory

SLIDE SETS. COLOR. OMG
(402).....$2.75

This series includes 48 colored slides covering the complete disassembly, testing of components and assembly of the small engine ignition system. A 28 minute cassette tape, is included along with the written script to make this an excellent individualized instructional tool.

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Ignition Analyzer

ADVANCED. FILMSTRIP AND RECORD. FORD
(0701-204).....$9.95
FILMSTRIP AND CASSETTE.....$9.95
STUDENT REFERENCE BOOK.....$3.70

Introduction to use of oscilloscope. Discusses the tests that can be made and explains what is being measured. Shows patterns generated by most common ignition malfunctions and describes what to look for in pattern. Student needs understanding of ignition system functioning as prerequisite to easy understanding.

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Ignition Theory and Wiring

3 MODULES. HOFFMAN

(32-0408)	FRAMES	TIME
6.1.A TROUBLE SHOOTING THE IGNITION CIRCUIT	58	15:00
6.1.B CIRCUIT RESISTANCE	32	7:57
6.1.C IGNITION FAILURE ANALYSIS	41	8:14

TOTAL: NO. FRAMES 131/TIME 31:11 MIN.

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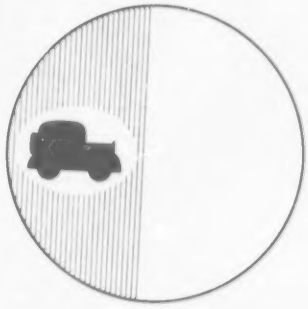
Spark Plugs

5 MODULES. HOFFMAN

(32-0411)	FRAMES	TIME
6.4.A CONVENTIONAL AND RESISTOR SPARK PLUGS	15	2:40
6.4.B SPARK PLUG SECONDARY SUPPRESSION CHECK	19	3.18
6.4.C SPARK PLUG DIAGNOSIS	24	5:39
6.4.D SPARK PLUG CONVERSION (AUDIO ONLY)		9:45
6.4.E PREPARATION & INSTALLATION SPARK PLUGS	22	4:37

TOTAL: NO. FRAMES 80/TIME 25:59



CHASSIS

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POWER TRAIN

AUTOMATIC TRANSMISSIONS
COMMERCIAL TRADES INSTITUTE. 1973. 832PP. MCGRAW-HILL
(12375-6).....$20.35

Diagnosis, maintenance, and repair of all types of automatic transmissions are covered in this comprehensive test-reference. Automobile, light and heavy commercial vehicle, and planetary and non-planetary industrial transmissions are included. A full list of test procedures for diagnosis and troubleshooting is featured. Self-study features include progress check questions and review questions.
CONTENTS: Matching Force and Distance; Gears & Planetary Systems; Hydraulics; Liquids in Motion; The Hydraulic Circuits; Compound Gears and their Control. The Hydra-Matic Transmission; The Dyna-flow Transmission; Transmission Valving Comes of Age; The Roto Hydra-Matic Transmission, Part 1. The Roto Hydra-Matic Transmission, Part 11.; The Powerglide Transmission; Evaluation of Chrysler Automatic Transmission, Parts 1 and 11; Improved Recent Versions, Parts 1, 11 and 111; C-4 Dual Range Transmission; Small Car Transmissions (Two-speed Ford); Import Versions of the Automatic Transmission (Hydrodynamic); Troubleshooting

Transmission (Passenger Cars); Commercial Vehicle Transmission (Light Trucks); Commercial Vehicle Transmissions (Heavy Trucks); Industrial Transmissions (Planetary); Industrial Transmissions (Non-Planetary); Turbo Hydro-Matic Front Wheel Drive and Diagnosis; Troubleshooting Methods; Shop and Bench Repair Methods Parts 1, 11 and 111 (miscellaneous Transmissions, Parts 1 and 11).

* * * *

WORKBOOK FOR AUTOMOTIVE TRANSMISSIONS AND POWER TRAINS

WM. CROUSE AND D.L. ANGLIN. 1976. 96PP. MCGRAW-HILL
(14638-1).....IN PRESS

Correlated with Automotive Transmissions and Power Trains, Fifth Edition, this student workbook is a shop guide, study guide, notebook, and work-progress report that provides hands-on experience through shop jobs and laboratory exercises. Clutches, transmissions, rear axles, differentials, drive lines and universal joints are presented in the form of shop activities that provide entry-level experience for all your students.
CONTENTS: Types and Constructions of Clutches; Trouble Diagnosis of the Clutch; Removal and Replacement of Clutches; Types and Constructions of Manual Transmissions; Trouble Diagnosis of Manual Transmissions; Removing and Installing Manual Transmissions; Manual Transmission Overhaul; Cleaning and Inspecting Manual Transmission Parts; Planetary Gear Operation; Overdrives; Torque Converters; Hydraulic Controls for Planetary Gears; GeneralMotors Type 300 Automatic Transmission; Borg-Warner 3 Speed Automatic Transmission; General Motors Type 350 and Type 400 Automatic Transmission; Chrysler Torqueflite Auto. Transmission; Ford C6 Auto. Transmission;

Changing Automatic Transmission Filter; Automatic Transmission Trouble Diagnosis; Replacing Automatic Transmissions; Universal Joint Service; Removal & Replacement of Rear Axles; Trouble Diagnosis of the Differential; Disassembling, Assembling, and Adjusting Differentials; Servicing Nonslip Differentials.

* * * *

AUTOMOTIVE POWER TRAIN MECHANIC

FIRST EDITION. 1973. 203PP. INDUSTRIAL EDUCATION
STUDY MANUAL AND ASSIGNMENT TESTS.....$10.80
ANSWER BOOK.....$ 2.50

This manual is a thorough study of the clutch, manual transmission, overdrive, automatic transmission, drive shaft, and rear axle assembly. Information for each assignment is detailed and illustrated. Includes The C6 Automatic Transmission, Ford Motor Co. 42 assignments.

* * * *

AUTOMOTIVE TRANSMISSIONS AND POWER TRAINS

FIFTH EDITION. WM. CROUSE & D.L. ANGLIN. 1976.
448PP. MCGRAW-HILL
(14637-3).....IN PRESS
WORKBOOK
(14638-1).....IN PRESS
TRANSPARENCIES, 1975
AUTOMOTIVE TRANSMISSIONS AND POWER TRAINS, SECOND EDITION.
(14750-7).....$93.50

This new edition has been rewritten to clearly explain the theories and servicing procedures of the drive train, clutches, manual & automatic transmissions, propeller shafts, and differentials. A 32 page color insert illustrates the most popular auto. transmissions, including Borg-Warner automatic.

POWER TRAIN

CONTENTS: Fundamental Principles; Automotive Clutches; Clutch Service; Transmissions; Overdrives; Standard Transmission and Overdrive Service; Torque Converters; Automatic Transmission Fundamentals; General Motors Type 300 Auto. Transmission; Aluminum Power glide Transmission Service; Borg-Warner Transmission and Three-Speed Automatic Transmission Service; General Motors Type 350 Turbo Hydra-Matic Transmission Type 350 Turbo Hydra-Matic Transmission Service; General Motors Type 400 Turbo Hydra-Matic Transmission and Service; Chrysler Torqueflite Automatic Transmission; Torqueflite Service; Ford Automatic Transmissions,; Ford C6 Transmission Service; Other Automatic Transmissions; Drive Lines; Rear Axles and Differentials.

* * * *

BASIC CLUTCHES AND TRANSMISSIONS NO. 3

PETERSON ACTION LIBRARY. GENERAL PUBLISHING
(2307 608).....$3.50

* * * *

POWER TRAINS

156PP. 212 ILLUS. FOUR COLORS. 8½ X 11 INCH. SOFT COVER. DEERE. FOS.
SINGLE COPY.....$5.75
10 OR MORE.....$4.30 EACH
(FOS-40B)

This book tells how the basic power trains work - gear, friction and fluid types. It defines the basic types of gears and gear failures using illustrations. It covers backlash, endplay, and preload adjustments. The book covers the complete story on six basic types of clutches. Has a complete story on modern hydrostatic drives and torque converters. Covers all types of gear

transmissions. It tells how to trouble shoot and locate failures. Has spot tests, glossary, pictures of failed parts.
CONTENTS: Basic Principles; Clutches and Mechanical Transmissions; Hydraulic Assist Transmissions; Hydrostatic Drives and Torque Converters; Differentials; final drives; PTO's and Special Drives.

* * * *

AUTOMATIC TRANSMISSIONS - AUTOMOTIVE

M.F. BREJCHA. 1973. 352PP. ILLUS. GENERAL PUBLISHING
.....$11.50
STUDY GUIDE.....$ 2.25

This book was written for those who will do practical work in the field. With many pictures, it covers everything a transmission specialist needs to know to enable him to grasp easily and utilize the information given in manufacturer's service publications.

* * * *

BRAKE AND WHEELS

AUTOMOTIVE BRAKES AND POWER TRANSMISSION SYSTEMS

I. FRAZEE, E. BEDELL, P.ESHELMAN. 1972. 268PP ILLUS. GENERAL PUBLISHING
.....$8.80

This book includes troubleshooting and repair of traditional types, and also torque converters and new automatic systems.

* * * *

BRAKE AND WHEELS

AUTOMOTIVE STEERING SYSTEMS

DWIGGINS. 1978. 256PP. SOFTCOVER. VAN NOSTRAND REINHOLD
(0028-X).....$5.95
INSTRUCTOR'S GUIDE
(0029-8).....$1.90

Principles of hydraulics and power steering applications are emphasized in this fully-functional, basic instructional material for front-end or steering system mechanic students. Developed as a unit course, this illustrated work textbook covers theory and service diagnosis procedures for Vehicle Suspension, Steering Geometry, Manual and Power Steering.
CONTENTS: Vehicle Suspension; Steering Geometry; Manual Steering; Power Steering.
Service Procedures to: Rotate tires; Adjust wheel bearing; Balance wheels; Check curb height; frame alignment, worn suspension, linkage, steering system; Adjust camber, caster; Align wheels; Adjust various types of gears; Align gear & column; Rebuild various types of pumps; Service various makes of valves, gears and cylinders; Install shocks; glossary.

* * * *

AUTOMOTIVE SUSPENSIONS, STEERING, ALIGNMENT AND BRAKES

W.E. BILLIET, E.A. VENK, W. ALLEY. 1975. 417PP. ILLUS. GENERAL PUBLISHING
.....$10.75
STUDY GUIDE.....$ 2.95

This fifth edition meets the developments of new wheel aligning equipment & methods. There is new auto frame designs, new front-end suspensions, illustrations. Also inclusion of entire text

from Disc and Drum Brake Service.

* * * *

BASIC CHASSIS, SUSPENSION & BRAKES

PETERSEN ACTION LIBRARY. GENERAL PUBLISHING
(2252 607).....$3.50

* * * *

BRAKE AND WHEEL ALIGNMENT MECHANIC

FIRST EDITION, 1971. INDUSTRIAL EDUCATION
STUDY GUIDE & UNIT TESTS.....$5.50
ANSWER BOOK.....$2.50

Information on safety, brake assemblies, application systems, brake service, complete brake job, front end suspension systems, wheel and tires, and wheel and tires, and wheel alignment factors is covered in 39 assignments. Of these assignments, 38 are based on Alley and Billiet, Automotive Suspensions, Steering, Alignment and Brakes, 4th ed. 1969, American Technical Society. The assignment on safety is based on Glenn, Automechanics, 2d. ed., 1969, Chas. Bennett.

* * * *

DISC AND DRUM BRAKE SERVICE

SECOND EDITION. 1974. W. ALLEY, W.E. BILLIET. ILLUS. 176 PP. GENERAL PUBLISHING
.....$6.15
STUDY GUIDE.....$2.00

This book covers construction, servicing and repairing of disc and drum brakes. Text is adaptable to any automotive courses, short or long.

BRAKE AND WHEELS

HYDRAULICS

172 PP. 276 ILLUS. FOUR COLORS. 8½ X 11 INCH SIZE SOFTCOVER. JOHN DEERE. FOS

SINGLE COPY.....$5.75
10 OR MORE.....$4.30
(FOS-10B)

This text covers the field of modern hydraulics - both open and closed center. It starts with the basic theory & builds up knowledge. It compares the various types of hydraulic pumps, valves, cylinders, and motors. Gives tips on maintenance & safety for hydraulic machines. Tells how to troubleshoot and locate failures. It defines the many terms and symbols used in hydraulics. Has spot tests at end of each chapter.
CONTENTS: Basic Principles and Basic Systems; Pumps; Valves; Cylinders; Motors; Accumulators; Filters; Reservoirs; Coolers; Hoses; Pipes and Tubes; Seals; Fluids; Maintenance and Trouble-shooting.

* * * *

PRINCIPLES OF WHEEL ALINEMENT SERVICE

E. MILES BACON. 1971. 160 PP. MCGRAW-HILL
(02851-6).....$2.90
INSTRUCTOR'S MANUAL (RESTRICTED)
(02852-4).....$1.65
STUDENT NOTEBOOK
(02854-0).....$2.05
INSTRUCTOR'S KIT
INCLUDES SET OF 80 SLIDES, TEXT, INSTRUCTOR'S MANUAL AND STUDENT NOTEBOOK
(79664-5).....$38.50

This multi-media program presents an on-the-job approach to wheel alinement service, what it is, and how it's conducted in a business establishment.

Suitable for classroom or industrial training program, it includes text book, a Student Notebook, 80 35mm. color slides and instructor's manual.
The program covers wheel alinement fundamentals, troubleshooting and adjustments. Suspension orientation, vehicle check, alinement angles, and background information are covered. An Instructor's Kit containing all course material, is available for preview.

* * * *

STEP BY STEP GUIDE TO BRAKE SERVICE

HERSCHEL WHITTINGTON & RAY WHITTINGTON. 1976. 238PP. 248 ILLUS. TAB BOOKS
(818) PAPER.....$4.95
HARDBOUND.....$7.95

This book shows how to fix all types of brakes for U.S. cars: drum, disc, combination disc and drum, nonservo, and power boost. A few manufacturers supply brakes for all U.S. cars: Bendix, Budd, Chrysler, Delco-Moraine, Kelsey-Hayes. This book explains what brakes your car has, and shows you in words and pictures exactly what you have to adjust, repair, replace, check out or road-test. Takes you through every segment of brake work, from simple bleeding to total system overhaul.
CONTENTS: Brake System Fundamentals; Master Cylinder and Power Booster; Valve and Switch Fundamentals; Drum and Disc Brake Fundamentals; Troubleshooting; Master Cylinder & Booster Overhaul; Disc Brake Overhaul; Brake Line and Valve Repair; Bleeding & Flushing; Parking Brake Adjustment and Overhaul; Step Lamp and Switch Repair; Brake System Tests; Index.

* * * *

BRAKE AND WHEELS

Tires And Tracks

72 PAGES. 162 ILLUS. TWO COLORS. 8½ X 11 INCH SIZE WITH SOFT COVER. JOHN DEERE. FOS
SINGLE COPY.....$3.25
10 OR MORE.....$2.45

This book covers all types of modern tires, auto, truck, implement, tractor, and large off the road. It explains how tires are constructed, rated, sized, inflated and ballasted. The text has illustrated stories on tire failures and repairs, mounting and demounting. Tells how tracks are constructed, lubricated, adjusted and inspected for wear. It shows how tracks are disassembled and repaired using a track press.
CONTENTS: Tires - Construction, Inflation, Ballasting, Tire Failures, Tire Repairs, Mounting and Demounting; Tracks- Construction, Inspection, Lubrication, Adjustments, Diagnosis of Wear, Repairing Tracks.

* * * *

Tires - Performance And Construction

ROBERT WALLING. 1970. RESOURCES DEVELOPMENT CORP.
.....$6.30

Tire performance at varying speeds, traction on wet dry, snow covered surface, acquaplaning. How and why of tread wear. Building a tire, tread pattern & depth, cord materials casing profile and performance. Tire and rim size factors, casing strength, load range in tire selection. Tests.

Tires - Troubleshooting And Service

ROBERT WALLING. 1970. RESOURCES DEVELOPMENT CORP.
.....$3.00

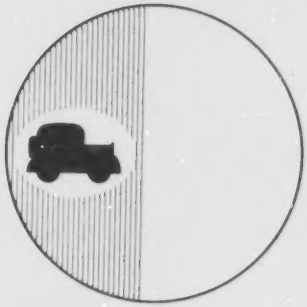
Proper inflation for various performance needs & loads. Recognizing wear & possible failure. Tests.

Tires

ROBERT WALLING. RESOURCES DEVELOPMENT CORP.
FOR SERVICE STATION EMPLOYEES.....$8.40
UNIT 1. CONSTRUCTION & DYNAMICS.....$3.80
UNIT 2. SERVICING & SELLING.....$3.85
UNIT 3. THE CUSTOMER.....$ .75
SHOCK ABSORBERS.....$3.00

Automotive suspension system, function, wear, damage, installation, service of shock absorbers. 1972.

* * * *



CHASSIS

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BRAKE

Brake Fundamentals

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK
FORD
(1201-106).....$9.95
STUDENT BOOK.....$3.25

Advanced, Intermediate, Basic. Discusses basic operating principles of brakes and basic construction of single cylinder dual-piston drum brakes and floating caliper disc brakes. Covers self-adjusting mechanisms, parking brakes, and hydraulic system.

* * * *

Brakes (Principles of Operation)

TRANSPARENCIES (24) AND INSTRUCTOR NOTES.
FORD
(1201-107).....$28.00
NOTES ONLY.....$5.35

Intermediate, advanced. Discusses construction and principles of operation of single cylinder dual-piston drum brakes, floating caliper disc brakes, and basic power brake (vacuum) boosters. Emphasis on hydraulic systems.

* * * *

Air Brakes L-Series Truck

FILMSTRIP AND RECORD, STUDENT REFERENCE BOOK.
FORD
(1240-001).....$9.95
STUDENT BOOK.....$3.70

Advanced. Discusses complete cam and/or wedge type air brake systems as installed on Ford L-Series trucks. Coverage includes principles of operation, testing, diagnosis, and service repair.

* * * *

Ford Truck Air Brake Systems

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1240-002).....$9.95
STUDENT BOOK.....$3.25

Advanced. Describes new air brake valves and line routing for 1975 Ford Trucks to meet Federal Motor Vehicle Safety Standard 121. Film review book contains schematics for all series Ford air brake equipped trucks.

* * * *

Caster-Camber Adjustments

SUPER 8 FILM LOOPS. MEDEX
FAA102 CAM ASSEMBLIES
FAA112 SHIM ASSEMBLIES
FAA122 SLOT ASSEMBLIES
FAA132 TOE & CENTER STEERING ADJUSTMENTS
FAA142 ADJUSTING TORSION BAR SUSPENSION

SELF- ADJUSTING BRAKE SYSTEM:
FAA152 NOMENCLATURE & ADJUSTMENTS
FAA162 DISASSEMBLY PROCEDURES
FAA172 ASSEMBLY PROCEDURES

DISC BRAKE SYSTEM:
FAA182 DISASSEMBLY PROCEDURES
FAA192 ASSEMBLY PROCEDURES
FAA512 ROTOR DIAGNOSIS
FAA522 WHEEL PACKING PROCEDURES

BRAKE

FAA532 CALIPER SERVICE
FAA542 BLEEDING PROCEDURES

THE BRAKE LATHE:
FAA202 TURNING FRONT WHEEL DRUMS I
FAA212 TURNING FRONT WHEEL DRUMS II
FAA222 ARCING BRAKE SHOES
FAA462 TURNING BRAKE DRUMS (AMMCO) I
FAA472 TURNING BRAKE DRUMS (AMMCO) II
FAA482 GRINDING BRAKE SHOES (AMMCO)

THE DISC BRAKE LATHE:
FAA232 HOW TO MACHINE A DISC ROTOR I
FAA242 HOW TO MACHINE A DISC ROTOR II
FAA252 HOW TO ROTOFINISH A DISC
FAA492 MACHINING A DISC ROTOR I (AMMCO)
FAA502 MACHINING A DISC ROTOR II (AMMCO)

* * * *

WHEEL CYLINDER SERVICE

COLOR FILMSTRIP (21 FRAMES) AUDIO CASSETTE.
OMG
(TF-3A)

Covers the manipulative needed in the overhaul procedure of brake wheel cylinders.

* * * *

BRAKES

TRANSPARENCIES. MEDEX
COMPLETE SET.....$37.25
AM-17 BRAKE ASSEMBLY.....$ 5.35
AM-18 MASTER CYLINDER ASSEMBLY.....$ 5.35
AM-64 TYPICAL HYDRAULIC DUAL
BRAKE SYSTEM.....$3.85

AM-41 DISC BRAKE ASSEMBLY.....$3.85
AM-65 DISC BRAKE - CALIPER DISC.....$4.45
AM-66 DISC BRAKE - EXPLODED VIEW.....$4.45
AM-67 THE POWER BRAKE UNIT.....$3.25
AM-68 BRAKE ADJUSTMENT.....$3.25
AM-24 AVERAGE STOPPING DISTANCE.....$4.25

* * * *

DISC BRAKES

COLOR LOOPS (8).UNIVERSAL EDUCATION
7770 COMPLETE SET.....$176.00
7771 DUAL MASTER CYLINDER DISASSEMBLY PART I
7772 DUAL MASTER CYLINDER CLEANING & HONING PART II
7773 DUAL MASTER CYLINDER ASSEMBLY PART III
7774 DISC BRAKES: SINGLE PISTON CALIPER DISASSEMBLY
7775 DISC BRAKES: SINGLE PISTON CALIPER CLEANING AND INSPECTION
7776 DISC BRAKES: SINGLE PISTON CALIPER ASSEMBLY
7777 DISC BRAKES: REMOVING THE PADS
7778 DISC BRAKES: INSTALLING THE PADS

American automobile manufacturers offer disc caliper brakes on most of their motor cars. This series of 8 films depicts some of the procedure for servicing disc brakes components. The abundant use of close-ups and subjective viewpoint puts the viewer right into the action. These pictures are a valuable aid to the teacher and student.

* * * *

RUNNING GEAR

FILMSTRIP. COLOUR. 13 MIN. MORELAND-CATCHFORD
(17-710).....$175.00

Intermediate, Senior, Adult. A specially prepared

BRAKE

chassis is used to demonstrate the qualities of frame design and development. Integral body and frame construction is shown, and actions emphasize the types and functions of springs, shackles, and shock absorbers. Independent suspension systems are shown, and mechanical and hydraulic braking systems are demonstrated.

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MASTER CYLINDER SERVICE

COLOR FILMSTRIP (24 FRAMES) AUDIO CASSETTE.
OMG

Covers the manipulative skills involved in the overhaul procedure of brake cylinders.

* * * *

BRAKES

FILMSTRIPS. EALING SCIENTIFIC (MEGATECH)
GROUP VIII.....$36.35
AM-17 BRAKE ASSEMBLY
AM-18 MASTER CYLINDER ASSEMBLY
AM-64 TYPICAL DUAL HYDRAULIC BRAKE SYSTEM
AM-41 DISC BRAKE ASSEMBLY
AM-65 DISC BRAKE 1
AM-66 DISC BRAKE 2
AM-67 THE POWER BRAKE UNIT WITH DUAL MASTER CYLINDER
AM-68 BRAKE ADJUSTMENT
AM-24 AVERAGE STOPPING DISTANCE

* * * *

HYDRAULICS

COLOR SLIDE SET. 200 SLIDES (35MM) DEERE. FOS
COMPLETE SET.....$69.35

A comprehensive slide set of the illustrations in the "Hydraulics" manual. Slides are in same sequence as in the manual. For use in classroom with "Hydraulics" manuals as students' test.

* * * *

BRAKE HYDRAULICS

FILM STRIP AND RECORD. STUDENT REFERENCE BOOK.
CHRYSLER
(70-9).....$7.00
STUDENT REFERENCE BOOK.....$2.00

Explains Brake Fundamentals of Drum and Disc Brake Systems.

* * * *

AUTOMOTIVE BRAKES AND FRONT END REPAIR

MODULES. HOFFMAN.
.....$27.50 PER MODULE

This course is designed to provide a trainee with skills and knowledge required for entry-level capability in Automotive Brakes and Front End Repair. The course is composed of individual instructional modules, each covering a specific skill area. The modules are grouped into subject area Clusters that allow the instructor to tailor the course to fit individual training objectives. The course may be purchased in its entirety or separately.

BRAKES: PRINCIPLES & COMPONENTS

7 MODULES. HOFFMAN
(32-1703)

		FRAMES	TIME
2.4.C	BRAKE HARDWARE	24	4:35
5.1.A	HYDRAULIC BRAKING SYSTEM	24	6:30
5.1.B	POWER ASSISTED BRAKING SYSTEM	12	4:40
5.1.C	DRUM BRAKES	14	2:55
5.1.D	DISC BRAKES	21	5:25
5.2.A	A MASTER CYLINDER	21	5:25
5.2.B	WHEEL CYLINDERS	10	2:50

TOTAL: NO. FRAMES 126/TIME 32:20

Identification and explanation of the common brake hardware and types of braking systems.

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BRAKES: INSPECTION, BLEEDING AND ADJUSTING

7 MODULES. HOFFMAN
(32-1704)

		FRAMES	TIME
2.7.B	INSPECTION REPORTS: BRAKES	46	8:50
5.3.A	MINOR BRAKE ADJUSTMENT	20	5:50
5.3.B	MAJOR BRAKE ADJUSTMENT	25	5:15
5.3.C	PARKING BRAKE ADJUSTMENT	25	5:15
5.4.A	PRESSURE BLEEDING BRAKE SYSTEMS	16	3:15
5.4.B	HAND BLEEDING BRAKE SYSTEM	20	4:40
5.4.C	FLUSHING HYDRAULIC BRAKE SYSTEMS	14	3:30

TOTAL: NO. FRAMES 160/TIME 36:35 MIN.

Procedures for inspection and adjusting the brakes, and bleeding and flushing hydraulic brake systems.

* * * *

HYDRAULICS

TRANSPARENCY MASTERS. 150 MASTERS ON HEAVY 8½ X 11 SHEETS. BLACK AND WHITE WITH FOLDER. DEERE FOS
COMPLETE SET.....$16.50

A complete set selected from key illustrations in the "Hydraulics" manual. For use in classroom for making transparencies, work sheets, or both. Illustrations for masters are bold with large captions and are on durable sheets. Folder included with tab for easy filing.

* * * *

HYDRAULIC BRAKE SYSTEM

6 COLOR FILMSTRIPS AND TEACHER'S GUIDE. 6 - 12" RECORDS OR 6 CASSETTES. OMG
604R.....$109.00
604C CASSETTES.....$122.50

BASIC PARTS AND PRINCIPLES

Begins with a description of the Brake System - naming and locating the parts. Explains how Brakes work. Also details the construction and function of the Master Cylinder, Fluid in the Brake Lines, Wheel Cylinders & Brake Shoes. Describes action resulting from stepping on the Brake and what happens when the brake is released. Explains Single and Double Master Cylinders, the special requirements of Brake fluid, the different Brake Lining and types of Brake Shoes. Self-Energizing is detailed.

BRAKES

Problems: Causes and Corrections

Starts with a list of nine common Brake problems - fluid leaks, air in system, blocked lines, "frozen" and "lazy" wheel cylinders, fade, low pedal, high pedal with poor stop, pedal drops to floor and brakes that don't release. Each is described in terms of possible causes and the repair work necessary to correct each one.

How To Reline Drum-Type Brakes

This is a work story. Each procedure is fully described - starting with jacking up the car explaining left-hand threads, marking the parts, using safety glasses, removing the Brake shoes, arcing the Linings and installing new shoes. Primary & Secondary Linings are detailed. Following the installation of the new shoes, the complete procedure, right down to the road test, is thoroughly covered.

Servicing the Hydraulic System - Drum-Type

This filmstrip starts with rebuilding a Wheel Cylinder. It shows how to service Brake Lines & Master Cylinder - including installing a new Master Cylinder - and rebuilding an old one. Includes removing Master Cylinder, Honing it, installing new parts, Bleeding Master Cylinder on the work bench & installing it. Replacing Brake Lines is detailed. The last part of the story shows two methods of bleeding the brakes - Manual and Pressure.

How to Reline Disk-Type Brakes

The Caliper is fully described showing how it works. It names its parts and how to take it off the car. Shows how to install new Friction Pads. Each step is clearly shown right down to cleaning the parts with compressed air - never with gasoline. The reassembly is completely shown. The story ends with the necessary qualities of a road test.

Servicing The Hydraulic System - Disk-Type

This filmstrip details the steps in re-building a Caliper - Honing the bore, replacing the Seals, installing Piston with special tools, checking the necessary clearance and putting it back on car. Bleeding Disk Brakes is also explained using Manual and Pressure techniques. The Combination Valve is also described - its parts and functions. The story ends with an adequate road test.

* * * *

Automotive Steering Systems

1976 TRANSPARENCIES. CROUSE, HEISEL, MCGRAW HILL RYERSON
1972(14674-8).....$93.50

Various types of steering linkages and the construction and operation of the principal manual steering tears are covered in this four-unit set.

* * * *

BRAKES

Automotive Brakes

1976 TRANSPARENCIES. COURSE, HEISEL. MCGRAW-HILL RYERSON
1971(14673-X).....$93.50 NET.

This set contains eight units demonstrating typical brake systems, master cylinders, hydraulics, dual systems, and disk brakes.

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Drum Lathe Operation

COLOR FILMSTRIP (36 FRAMES). AUDIO CASSETTE.
OMG
(TF-5A).....

Covers the manipulative skills needed in the operation of the Armco Drum Lathe.

* * * *

FRONT END AND STEERING

Front End Assembly

FILMSTRIPS. EALING SCIENTIFIC (MEGATECH)
GROUP IX.....$61.95
AM-19 FRONT WHEEL BEARINGS
AM-20 FRONT WHEEL BEARING LUBRICATION
AM-69 FRONT END SUSPENSION: BALL JOINT
AM-70 FRONT END SUSPENSION: TORSION BAR
AM-71 FRONT END ALIGNMENT-CASTER & CHAMBER ANGLES
AM-72 FRONT END ALIGNMENT: STEERING AXIS INCLINATION
AM-73 FRONT END ALIGNMENT - TOE-IN AND TOE-OUT ON TURNS.
AM-74 FRONT END ALIGNMENT-INTER-RELATION OF ANGLES
AM-75 FRONT END ALIGNMENT PRELIMINARY CHECKS
AM-76 CHECKING BALL JOINTS FOR WEAR
AM-21 STEERING SYSTEM
AM-42 THE RECIRCULATING BALL TYPE STEERING GEAR
AM-77 LINKAGE TYPE POWER STEERING SYSTEM
AM-78 LINKAGE TYPE POWER STEERING SYSTEM
AM-79 POWER STEERING GEAR

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Front Suspension and Steering Fundamentals of Power Steering

27 SLIDES. TRAINING BOOKLET. CHRYSLER
(TM-401).....$13.50
TRAINING BOOKLET.....$ 2.00

Explains Fundamentals of Power Steering.

Basic Principles of Wheel Alignment

TRAINING BOOKLET. CHRYSLER
(81-960-0001).....$2.00

Explains Principles of Wheel Alignment - Camber, Caster, KPI, Toe-in

Dodge Truck - Sound, Vibrations and Performance Analysis

TRAINING BOOKLET. CHRYSLER
(81-355-0102).....$2.00

Explains Fundamentals of Sound and Vibration Diagnosis for Service Applications.

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FRONT END AND STEERING

Suspension and Steering

8 TRANSPARENCIES AND INSTRUCTOR NOTES. FORD
(1010-105).....$15.00
NOTES ONLY.....$ 5.35
(1010-104)STUDENT REFERENCE BOOK..$ 3.70

Discusses basic types of front and rear suspension shock absorbers and manual steering systems. Emphasis on principles of operation and construction. LHB also discusses basic alignment factors & basic types of power steering systems. Intermediate and Advanced.

* * * *

Front Wheel Alignment and Balance

FILMSTRIP AND RECORD. FORD
(1030-005).....$9.95
PROGRAMMED INSTRUCTION BOOK.....$4.80

Discusses wheel alignment factors and their relation to vehicle handling, tire wear, etc. Also covers principles of wheel balancing and balancing techniques and equipment. Intermediate & Advanced.

* * * *

Heavy Truck Wheel Alignment And Balance

FILMSTRIP AND RECORD. FORD
(1030-006).....$20.00
STUDENT REFERENCE BOOK.....$ 3.25

Intermediate/Advanced. Covers a review of wheel alignment theory. Shows proper method of checking and adjusting toe-in with a trammel bar. Covers cab bounce diagnosis, wheel runout checks and hub and drum balance using special mandrel.

* * * *

Heavy Truck Drivetrain Alignment

FILMSTRIP AND RECORD. FORD
(1040-001).....$20.00
STUDENT REFERENCE BOOK.....$ 3.25

Advanced. Covers diagnosis of noise and vibration resulting from drivetrain alignment problems. Shows proper angle and measurement and correction procedures.

* * * *

Steering Systems

4 MODULES. HOFFMAN
(32-1705)

		FRAMES	TIME
4.1.A	THE MANUAL STEERING SYSTEM	23	6:55
4.1.B	POWER ASSISTED STEERING SYSTEMS	30	7:00
4.2	STEERING LINKAGE	21	4:35
4.3	IDLER ARM REPLACEMENT	32	6:15

TOTAL: NO. FRAMES 106/TIME 24:45 MIN.

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Automotive Transparencies Series

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BOOSTER; DISC BRAKE ASSEMBLY; CHASSIS COMPONENTS; TIRE CONSTRUCTION CONVENTIONAL AND RADIAL PLIES; TIRE CONSTRUCTION STEEL CORD RADIAL; CASTER ANGLE; CAMBER ANGLE; STEERING GEAR; BALL JOINT; POWER STEERING OPERATION, LINKAGE TYPE; ENGINE COMPONENTS; CYLINDER ARRANGEMENT; TYPES OF LOAD BEARINGS; COOLING SYSTEM.

* * * *

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* * * *

DRIVE LINE

FILMSTRIP. COLOUR. MORELAND CATCHFORD
(17-712).....$175.00 13 MIN.

The construction of the single plate dry disc clutch is explained, its function is shown with a cut-away model, and linkage to clutch pedal is pointed out. Cut-aways also show a typical three-speed gear selection system. The principle and the parts of the differential are explained, along with descriptions of the drive shaft, types of axles and bearings. Intermediate, Senior, Adult.

* * * *

REAR AXLE & DRIVE SHAFT (PRINCIPLES OF OPERATION)

TRANSPARENCIES (9) AND INSTRUCTOR NOTES. FORD
(1501-103).....$17.00
(1501-102) NOTES ONLY.....$ 5.35

Discusses construction and operation of some current designs of drive shafts, ring and pinion, differentials, and limited slip differentials. Analyzes acceptable and non-acceptable tooth wear patterns. Basic, Intermediate, Advanced.

* * * *

REAR AXLE DIAGNOSIS AND REPAIR

FILMSTRIP AND RECORDS. FORD
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STUDENT REFERENCE BOOK.....$3.70

Discusses correct techniques for disassembly, inspection, and reassembly of a typical rear axle.

FRONT END AND STEERING

Emphasizes inspection for conditions which cause common types of complaints and assembly techniques to assure proper operation of the finished job. Advanced.

* * * *

CAR AND LIGHT TRUCK POWER STEERING (DIAGNOSIS AND INSPECTION)

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1341-204).....$9.95
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Advanced. Covers test procedures, adjustments, disassembly and inspection of integral power steering gear and pump - all related to common power steering complaints.

* * * *

TWIN I-BEAM FRONT SUSPENSION

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1421-101).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Basic/Intermediate. Discusses the "Twin I-Beam" front suspension used for light trucks. Covers construction, principles of operation, servicing and diagnostic procedures.

* * * *

REAR AXLE AND DRIVE SHAFT (PRINCIPLES OF OPERATION)

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1501-101).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Basic, Intermediate/Advanced. Discusses purpose, construction and operation principles of drive shafts, universal joints, straddle mounted and overhung mount pinions and hunting and non-hunting ring gears, differentials and limited slip differentials. Emphasis on what they do and how they work.

* * * *

AUTOMATIC LOAD LEVELING SYSTEM

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1451-001).....$9.95
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Advanced. Discusses construction, operating principles, testing, and diagnostic procedures for air-bag type systems with a vacuum driven compressor.

* * * *

ANTI-LOCK SYSTEMS FOR AIR BRAKE TRUCKS

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1241-001).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Advanced. Discusses operation, service and diagnosis testing on Eaton and Kelsey-Hayes air brake anti-lock systems.

* * * *

CAR POWER STEERING (PRINCIPLES OF OPERATION)

TRANSPARENCIES (12) AND INSTRUCTOR NOTES. FORD
(1301-151).....$18.00
NOTES ONLY.....$ 5.35

FRONT END AND STEERING

Intermediate/Advanced. Discusses construction and operating principles of both linkage-type and integral power steering systems. Covers steering gear, pump, and connection to steering column.

* * * *

CAR POWER STEERING (DIAGNOSIS AND ADJUSTMENT)

TRANSPARENCIES (19) AND INSTRUCTOR NOTES. FORD
(1301-255).....$24.00
NOTES ONLY.....$ 5.35

Advanced. Discusses testing, diagnostic, and adjustment procedures for both linkage-type and integral power steering systems. Covers steering gears and pumps but does not cover locking steering columns.

* * * *

ROSS INTEGRAL POWER STEERING GEAR (DIAGNOSIS AND OVERHAUL)

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1302-252).....$20.00
STUDENT REFERENCE BOOK.....$ 3.25

Advanced. Covers pressure testing heavy truck power steering systems and overhaul of the Ross integral steering gears, HF54 and HF64.

* * * *

STEERING GEOMETRY

COLOR FILMSTRIP (30 FRAMES) AUDIO CASSETTE. WORKSHEET. DIAGNOSIS CHART. INFORMATION SHEET. OMG
(TE-2A).....

Teaches the theory of steering geometry as it relates to front end alignment covering in detail the following angles: caster, camber, steering axis inclination, toe-in, and turning radius.

* * * *

VEHICLE VIBRATION ANALYSIS

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(0910-013).....$9.95
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Advanced/Intermediate. Discusses some common causes of vehicle vibration with emphasis on drive shaft alignment, pinion angle, etc. Covers measurement and testing techniques and basic diagnostic procedures.

* * * *

AUTOMOTIVE TROUBLESHOOTING CARDS: STEERING AND SUSPENSION BRAKES

PLAYING CARDS. WM. CROUSE. MCGRAW-HILL RYERSON
(01450-7).....$2.75

This is a set of 58 "playing cards" with which students can test themselves and reinforce their knowledge of troubleshooting problems with the engine, steering, and suspension brake systems. The problem is stated on one side and the solution on the other side.

* * * *

AUTOMOTIVE SUSPENSION SYSTEMS

1976 TRANSPARENCIES. CROUSE AND HEISEL. MCGRAW-HILL

FRONT END AND STEERING

(14675-6).....$93.50 NET.

This six-unit set deals with coil-spring, leaf-spring, torsion-bar front suspensions, shock absorbers, front-end geometry and rear suspensions.

* * * *

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Power Trains

TRANSPARENCY MASTERS. 130 MASTERS ON HEAVY 8½ X 11 SHEETS. BLACK AND WHITE. WITH FOLDER. DEERE FOS
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A complete set selected from key illustrations in the "Power Trains" manual. For use in classroom for making transparencies, work sheets, or both. Illustrations for masters are bold with large captions and are on durable sheets. Folder included with tab for easy filing.

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COMPLETE SET.....$67.25

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MOVEABLE TRANSPARENCIES. OMG
G-2000.....$285.00

SIX GEAR TRAIN
G-200.....$ 36.50

Illustrates the basic concept that in a simple gear train, every other gear turns in the same direction. Designed for use with G-205.

FIVE GEAR TRAIN
G-205.....$ 36.50

A dynamic follow-up to G-200 showing a locked set of gears.

PLANETARY GEAR
G-215.....$ 36.50

Presents seven gear ratios available from a set of planetary gears, including reverse, low, direct drive and overdrive.

MULTI-GEAR TRAIN
G-210.....$ 33.00

Unit of odd-sized gears. Demonstrates that all gears the same size turn at the same speed. May be used to teach gear revolutions per minute and simple gear ratios.

COMPOUND GEARS
G-220.....$ 36.50

A combination of two simple trains and two compound trains illustrating speed reduction, gear ratios & proportions.

POWER TRAINS

SCOTCH YOKE
M-410.....$46.50

Demonstrates linear to rotary motion. Crankpin both turns and slides inside slotted yoke, rod moves in a straight line.

CARDAN GEAR
M-420.....$46.50

Shows a gear assembly using a crank to drive a small gear around a stationary gear. The rod, connected to the small gear with a secondary crank, moves in a straight line.

TRAMMEL
M-400.....$46.50

Illustrates action similar to a conventional gas engine crankshaft and connecting rod. Crank end of the connecting rod is attached to two slides which move alternately in grooves.

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TRANSMISSION

AUTOMOTIVE TRANSMISSION REPAIR

MODULES. HOFFMAN
PER MODULE (1 FILM AND 1 CASSETTE).....$27.50
SLIDES.....$36.50

This course is designed to provide a trainee with skills and knowledge required for entry-level capability in Automotive Transmission Repair. The course is composed of individual instructional modules, each covering a specific skill area.

The Modules are grouped into subject-area Clusters that allow the instructor to tailor the course to fit individual training objectives. The course may be purchased in its entirety, or individual clusters may be purchased separately.

AUTOMOTIVE TRANSMISSION REPAIR AND REPLACE

2 MODULES. HOFFMAN
(32-1905)

		FRAMES	TIME
5.1	AUTOMATIC TRANSMISSION REMOVAL GENERAL PROCEDURES	22	3:32
5.4	AUTOMATIC TRANSMISSION INSTALLATION	22	3:12

TOTAL: NO. FRAMES 44/TIME 6:44 MIN.

Procedures for removal and replacement of a complete transmission unit.

* * * *

CHECKING THE AUTOMOTIVE TRANSMISSION

5 MODULES. HOFFMAN
(32-1903)

		FRAMES	TIME
4.2	FLUID LEVEL AND CONDITION	21	8:12
4.3	ROAD TESTING AUTOMATIC TRANSMISSIONS	19	6:00
4.4	ENGINE CHECK	17	3:09
4.6	LEAKAGE CHECK	17	2:45
4.7	THE STALL TEST	15	3:15

TOTAL: NO. FRAMES 89/TIME 23:21 MIN.

Testing, servicing and procedural checks for maintaining the transmission system and related compon-

TRANSMISSION

Ford C-6 Overhaul

4 MODULES. HOFFMAN
(32-1908)

		FRAMES	TIME
5.2.E	FORD C-6 DISASSEMBLY	35	6:57
5.2.F	FORD C-6 SUBASSEMBLY OVERHAUL PART I	34	7:09
5.2.G	FORD C-6 SUBASSEMBLY OVERHAUL PART II	50	11:14
5.2.H	REASSEMBLY OF FORD C-6 TRANSMISSION	34	6:45

TOTAL: NO. FRAMES 153/TIME 32:05 MIN.

Procedure for disassembly, repair, and assembly of the Ford C-6 transmission.

* * * *

Ford C-4 Transmission Overhaul

4 MODULES. HOFFMAN
(32-1907)

		FRAMES	TIME
5.2.I	FORD C-4 TRANSMISSION DISASSEMBLY	45	8:20
5.2.J	FORD C-4 SUBASSEMBLY OVERHAUL PART I	41	6:00
5.2.K	FORD C-4 SUBASSEMBLY OVERHAUL PART II	61	6:13
5.2.L	REASSEMBLY OF FORD C-4 TRANSMISSION	52	16:56

TOTAL: NO. FRAMES 199/TIME 37:29 MIN.

Procedure for disassembly, repair and assembly of the Ford C-4 transmission.

How Transmissions Operate

8 MODULES. HOFFMAN
(32-1902)

		FRAMES	TIME
3.5.A	AUTOMATIC TRANSMISSION OPERATION	26	7:19
3.5.B	TURBO HYDRA-MATIC TRANSMISSION OPERATION	21	5:24
3.5.C	FORD C-6 OPERATION	29	8:35
3.5.D	FORD C-4 OPERATION	24	6:40
3.5.E	TORQUEFLITE OPERATION	22	6:05
3.5.F	POWERGLIDE OPERATION	18	5:05
3.6	HYDRAULIC CONTROL SYSTEMS	23	7:20
3.7	THE MANUAL TRANSMISSION	19	5:17

TOTAL: NO. FRAMES 182/TIME 51:45 MIN.

Explanation of the component parts in a planetary gear system and the major types of transmission systems.

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Hydraulic Principles

6 MODULES. HOFFMAN
(32-1901)

		FRAMES	TIME
3.3.A	HYDRAULIC APPLICATIONS	23	6:35
3.3.B	HYDRAULIC APPLICATIONS	27	8:07
3.4.A	THEORY OF POWER CONVERSION & TRANSMISSION	21	5:08
3.4.B	POWER CONVERSION & TRANSMISSION PLANETARY GEARS	23	5:28
3.4.C	POWER CONVERSION & TRANSMISSION FLUID COUPLING	21	5:08
3.4.D	POWER CONVERSION & TRANSMISSION TORQUE CONVERTERS	18	5:28

TRANSMISSION

TOTAL: NO. FRAMES 133/TIME 35:54 MIN.

Theoretical and practical application of hydraulic principles and the actual power conversions by the movement of fluid in the transmission systems.

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POWERGLIDE OVERHAUL

4 MODULES. HOFFMAN
(32-1909)

		FRAMES	TIME
5.3.F	POWERGLIDE DISASSEMBLY	29	6:20
5.3.G	POWERGLIDE SUBASSEMBLY OVERHAUL, PART I	48	6:10
5.3.H	POWERGLIDE SUBASSEMBLY OVERHAUL, PART II	58	11:35
5.3.I	REASSEMBLY OF POWERGLIDE TRANSMISSION	38	9:15

TOTAL: NO. FRAMES 173/TIME 33:20 MIN.

Procedure for disassembly, repair and assembly of the Powerglide transmission.

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SERVICING THE AUTOMOTIVE TRANSMISSION

4 MODULES. HOFFMAN
(32-1904)

		FRAMES	TIME
4.5	LINKAGE ADJUSTMENT	34	8:59
4.8.A	ON-THE-CAR-SERVICE	34	6:48
4.8.B	ON-THE-CAR-SERVICE	29	6:06
4.8.C	ON-THE-CAR-SERVICE	20	4:23

TOTAL: NO. FRAMES 117/TIME 26:16 MIN.

Discussed in this cluster are the shift and throttle linkages as well as on-the-car servicing on the several types of transmission units generally used today.

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TORQUEFLITE OVERHAUL

4 MODULES. HOFFMAN
(32-1906)

		FRAMES	TIME
5.2.A	TORQUEFLITE DISASSEMBLY	37	6:40
5.2.B	TORQUEFLITE SUBASSEMBLY OVERHAUL, PART I	47	10:35
5.2.C	TORQUEFLITE SUBASSEMBLY OVERHAUL, PART II	74	20:20
5.2.D	REASSEMBLY OF TORQUEFLITE TRANSMISSION	39	9:57

TOTAL: NO. FRAMES 197/TIME 47:32 MIN.

Procedure for disassembly, repair, and assembly of the Torqueflite transmission.

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TURBO-HYDRAMATIC OVERHAUL

5 MODULES. HOFFMAN
(32-1910)

		FRAMES	TIME
5.3.A	TURBO HYDRAMATIC DISASSEMBLY	55	8:15
5.3.B	TURBO HYDRAMATIC SUBASSEMBLY OVERHAUL, PART I	36	7:50
5.3.C	TURBO HYDRAMATIC SUBASSEMBLY OVERHAUL, PART II	53	9:15
5.3.D	TURBO HYDRAMATIC SUBASSEMBLY OVERHAUL, PART III	72	13:00

5.3.E REASSEMBLY OF TURBO HYDRAMATIC TRANSMISSION 72 14:15

TOTAL: NO. FRAMES 288/TIME 52:35 MIN.

Procedure for disassembly, repair, and assembly of the turbo-hydramatic transmission.

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THE TRANSMISSION

FILMSTRIPS. MEDEX
COMPLETE SET.....$53.95
AM-15 CONVENTIONAL TRANSMISSION.....$15.35
AM-36 SYNCHRO-MESH TRANSMISSION POWER FLOW.....$13.95

AUTOMATIC TRANSMISSION:
AM-55 CONSTRUCTION.....$ 3.25
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AM-58 PLANETARY GEARING.....$ 3.95
AM-59 TYPICAL TORQUE CONVERTER.....$ 3.25

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AUTOMATIC TRANSMISSION MODEL C-4 (PRINCIPLES OF OPERATION)

TRANSPARENCIES (23) AND INSTRUCTOR NOTES. STUDENT REFERENCE BOOK. FORD
(1705-104).....$28.00
NOTES ONLY.....$ 5.35
STUDENT REFERENCE BOOK.....$ 4.00

Discusses construction, operation and adjustment of this medium duty transmission. Also presents basic diagnostic tests that are applicable to

this model. Extensive coverage of hydraulic circuitry, valve functions, etc. Intermediate, Advanced.

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AUTOMATIC TRANSMISSION MODEL C-3 (PRINCIPLES OF OPERATION AND DIAGNOSIS)

STUDENT REFERENCE BOOK. FORD
(1708-002).....$4.00

Advanced. Explains the construction and functioning of the C-3 model transmission. Also covers performance of on-car diagnostic tests and band adjustment.

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AUTOMATIC TRANSMISSION MODEL C-6 (PRINCIPLES OF OPERATION)

FILMSTRIP AND RECORD. TRANSPARENCIES (24). INSTRUCTOR NOTES. STUDENT REFERENCE BOOK. FORD
(1710-101)FILMSTRIP AND RECORD.....$9.95
(1710-103)TRANSPARENCIES & INSTRUCTOR NOTES $28.00
(1710-103)NOTES ONLY.....$5.35
(1710-104)STUDENT REFERENCE BOOK.....$4.00

Intermediate/Advanced. Discusses the construction & functioning of the C-6 model transmission. Transparencies emphasize hydraulic control circuitry. Also covers basic diagnostic equipment techniques, and procedures that are applicable to this model.

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TRANSMISSION

AUTOMATIC TRANSMISSION MODEL FMX (PRINCIPLES OF OPERATION)

TRANSPARENCIES (17) AND INSTRUCTOR NOTES. FORD
(1715-106).....$23.00
NOTES ONLY.....$ 5.35

Intermediate/Advanced. Discusses the construction and functioning of the FMX-MX model transmission which is the direct descendant of the original Ford automatic transmission design. Extensive coverage of hydraulic control circuits and power flow through planetary gears.

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CAR AND TRUCK CLUTCHES (PRINCIPLES OF OPERATION)

TRANSPARENCIES (10) AND INSTRUCTOR NOTES. FORD
(1601-102).....$17.00
(1601-103) NOTES ONLY.....$ 5.35

Basic/Intermediate/Advanced. Discusses construction and operation of single and multiple disc clutches. Also covers mechanical and hydraulic actuating linkages.

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CAR AND TRUCK CLUTCHES (DIAGNOSIS & ADJUSTMENT)

NOTES. FORD
(1601-201).....$5.35

Basic/Advanced. Discusses measurement, tests, adjustments and minor repair of single and multiple disc car and truck clutches and of mechanical and hydraulic actuating linkages.

MANUAL SHIFT 3 SPEED TRANSMISSIONS AND OVERDRIVE UNITS (PRINCIPLES OF OPERATION)

TRANSPARENCIES (16) AND INSTRUCTOR NOTES. FORD
(1611-104).....$22.00
NOTES ONLY.....$ 5.35

Basic/Intermediate/Advanced. Discusses construction and operating principles of Ford 3.03 and Warner 3 speed manual shift transmissions and of Warner overdrive unit.

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MANUAL SHIFT 3 AND 4 SPEED TRANSMISSIONS (DIAGNOSIS AND TESTING)

TRANSPARENCIES (13) AND INSTRUCTOR NOTES. FORD
(1611-204).....$19.00
NOTES ONLY.....$ 5.35

Advanced. Describes diagnostic procedures for common complaints involving transmission, clutch, and shift linkages as well as overdrive mechanical and electrical checks.

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MANUAL SHIFT 4 SPEED TRANSMISSIONS (PRINCIPLES OF OPERATION)

TRANSPARENCIES (6) AND INSTRUCTOR NOTES. FORD
(1620-102).....$15.00
NOTES ONLY.....$ 5.35

Basic. Discusses construction and operation of Ford Ford-Dagenham (light duty) and Warner 4 speed transmission.

TRANSMISSION

AUTOMATIC TRANSMISSION DIAGNOSIS

FILMSTRIP AND RECORD. PROGRAMMED INSTRUCTION BOOK. FORD
(1701-201).....$9.95
INSTRUCTION BOOK.....$5.00

Advanced. Presents easy but proven step-by-step diagnostic procedures that will be effective with all Ford automatic transmissions.

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AUTOMATIC TRANSMISSION ERRATIC SHIFTS (DIAGNOSIS)

FILMSTRIP AND RECORD. STUDENT REFERENCE BOOK. FORD
(1701-202).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Advanced. Deals specifically with the way automatic transmissions shift and diagnosis of erratic shifting. Companion piece to 1701-201 above.

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AUTOMATIC TRANSMISSION (DIAGNOSIS) C-3, C-4, C-6, FMX

STUDENT REFERENCE BOOK, DIAGNOSIS WHEEL, DIAGNOSIS CHECK SHEET. FORD
(1701-203).....$4.00

Advanced. Provides a guide to performing diagnostic tests for automatic transmissions and instructions for tests most frequently required.

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AUTOMATIC TRANSMISSION SERVICE

2 FILMSTRIPS AND 2 RECORDS. PROGRAMMED INSTRUCTION BOOK. FORD
(1701-502).....$19.90
INSTRUCTION BOOK.....$ 4.80

Advanced. Companion piece to 1701-201 above. Presents simple, straightforward servicing procedures for three areas that frequently dismay students - the valve body, the converter, and the fluid pump. Demonstrates that anyone with basic mechanical skills and understanding can service these parts successfully.

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AUTOMOTIVE TRANSMISSIONS AND POWER TRAINS (SECOND EDITION)

TRANSPARENCIES. 1975. CROUSE & HEISEL. MCGRAW-HILL
(14750-7).....$93.50 NET

This set covers power train components, clutches, manual transmissions, propeller shafts, and differentials.

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MULTI-SHUTTER VIEWER STAGE

MCGRAW-HILL
(67511-2).....$8.25

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TRANSMISSION

Complete Automotive Transparencies Series

TRANSPARENCIES. CROUSE & HEISEL. MCGRAW-HILL
(79528-2).....$561.00 NET

Multi-Shutter Viewer Stage included.

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The Clutch Assembly - Group V

MULTICOLOURED TRANSPARENCIES WITH OVERLAYS.
EALING SCIENTIFIC (MEGATECH)
AM-14 CLUTCH
AM-35 THE SEMI-CENTRIFUGAL CLUTCH
.....$10.20

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The Transmission - Group VI

MULTICOLOURED TRANSPARENCIES WITH OVERLAYS
EALING SCIENTIFIC (MEGATECH)
AM-15 CONVENTIONAL TRANSMISSION
AM-36 THE SYNCHRO-MESH TRANSMISSION POWER FLOW
AM-55 AUTOMATIC TRANSMISSION CONSTRUCTION
AM-56 AUTOMATIC TRANSMISSION: CROSS SECTION
AM-57 AUTOMATIC TRANSMISSION POWER FLOW
AM-58 PLANETARY GEARING
AM-59 A TYPICAL TORQUE CONVERTER
.....$52.45

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The Rear Axle Assemble - Group VII

MULTICOLOURED TRANSPARENCIES WITH OVERLAYS
EALING SCIENTIFIC (MEGATECH)
AM-16 DIFFERENTIAL FUNDAMENTALS
AM-37 LIMITED SLIP DIFFERENTIAL
AM-38 HYPOID REAR AXLE ASSEMBLY
AM-39 UNIVERSAL JOINT TYPES
AM-40 PROPELLOR SHAFT-THREE POINT DESIGN
AM-60 SEMI-ELLIPTIC SUSPENSION
AM-61 SEMI-ELLIPTIC SPRING
AM-62 TRANSVERSE SPRING SUSPENSION
AM-63 COIL SPRING SUSPENSION
.....$39.65

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Rear Axle Assembly

FILMSTRIPS. MEDEX
COMPLETE SET.....$40.85
AM-16 DIFFERENTIAL FUNDAMENTALS...$ 9.75
AM-37 LIMITED SLIP DIFFERENTIAL...$ 5.95
AM-38 HYPOID REAR AXLE ASSEMBLY...$ 4.45
AM-39 UNIVERSAL JOINT TYPES.....$ 3.85
AM-40 PROPELLOR SHAFT.....$ 4.45
AM-60 SEMI-ELLIPTIC SUSPENSION....$ 3.25
AM-61 SEMI-ELLIPTIC SPRING.....$ 3.25
AM-62 TRANSVERSE SPRING SUSPENSION$ 3.25
AM-63 COIL SPRING SUSPENSION.....$ 3.25

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Magneto

MOVEABLE TRANSPARENCIES. OMG
PS-625.....$46.50

Includes a rotating flywheel with simulated permanent magnet, a capacitor, breaker assembly, breaker points and cam actuator. Illustrates complicated magneto ignition timing simply.

WHEELS AND TIRES

PRE-ALIGNMENT CHECKS

COLOR FILMSTRIP (26 FRAMES), AUDIO CASSETTE, WORKSHEET, AND INFORMATION SHEET. OMG
TE-2B.....

Teaches the procedures for checking the suspension and steering for problems that may prevent proper wheel alignment.

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WHEELS AND TIRES

COLOUR FILMSTRIP. MORELAND LATCHFORD
(17-711).....$175.00 12 MIN.

Tire construction is shown in terms of the tire's function, and tire care, inflation, regular wheel to wheel rotation, are stressed. The wheel, its rim, drop centre and flanges are described. Tire removal, use of a balance mark, and tire refitting are shown, stressing methods for handling tubeless tires. The removal of the entire front wheel assembly is covered in steps, and then its re-assembly is shown. Intermediate, Senior Adult.

* * * *

WHEELS AND TIRES - GROUP X

MULTICOLOURED TRANSPARENCIES WITH OVERLAYS
EALING SCIENTIFIC (MEGATECH)
AM-22 WHEEL AND TIRE BALANCING
AM-80 WHEEL AND TIRE RUNOUT
AM-81 TIRES IN MOTION
AM-23 TUBELESS TIRE AND RIM
AM-82 REPAIRING THE TUBELESS TIRE
AM-43 METHODS OF TIRE ROTATION
AM-44 TIRES: INFLATION IN DAMAGE, LOW PROFILE
.....$24.95

* * * *

WHEELS AND TIRES

FILMSTRIPS, MEDEX
COMPLETE SET.....$25.75
AM-22 WHEEL AND TIRE BALANCING.....$ 3.25
AM-80 WHEEL AND TIRE RUNOUT.....$ 6.45
AM-81 TIRES IN MOTION.....$ 3.85
AM-23 TUBELESS TIRE & RIM.....$ 4.25
AM-82 TUBELESS TIRE - REPAIR.....$ 3.25
AM-43 TIRE ROTATION - METHODS.....$ 2.25
AM-44 TIRES - INFLATION IN DAMAGE..$ 2.85

* * * *

WHEELS & TIRES

3 MODULES. HOFFMAN

(32-1706)	FRAMES	TIME
4.4 THE WHEEL AND TIRE	31	6:50
4.5A STATIC BALANCE	29	8:00
4.5B DYNAMIC BALANCE	28	7:45

TOTAL: NO. FRAMES 88/TIME 22:35 MIN.

Brakes and Front End. Description of all the wheel component parts, their relationship to the axle and steering system, as well as the methods for static and dynamic wheel-balancing.

* * * *

WHEELS AND TIRES

TIRE CHANGING

SUPER 8 FILM LOOPS. MEDEX
FAA012 NOMENCLATURE AND DE-MOUNTING
FAA022 MOUNTING AND LEAKAGE TESTS

WHEEL BALANCING:
FAA032 RUN-OUT AND OUT-OF-BALANCE
FAA042 FRONT WHEELS
FAA052 REAR WHEELS

WHEEL ALIGNMENT:
FAA062 SET-UP AND SUSPENSION CHECKS
FAA072 CHECKING CAMBER
FAA082 CHECKING CASTER
FAA-92 TOE AND CENTER STIRRING CHECKS

* * * *

TIRE PROBLEM ANALYSIS

FILMSTRIP AND RECORD. FORD
(0910-004).....$9.95
FILMSTRIP AND CASSETTE.....$9.95
STUDENT REFERENCE BOOK.....$3.25

Discusses the composition of tires, the forces which act upon tires, testing and measurement techniques and basic diagnostic procedures for some common tire complaints.

* * * *

SUSPENSION

INSPECTION AND COMPONENT IDENTIFICATION

7 MODULES. HOFFMAN
(32-1707)

		FRAMES	TIME
2.7.A	INSPECTION REPORTS: SUSPENSION	41	10:08
3.2.A	THE FRONT SUSPENSION SYSTEM: SOLID AXLE	16	3:30
3.2.B	THE FRONT SUSPENSION SYSTEM: INDEPENDENT	15	3:00
3.3.A	FRONT SUSPENSION COMPONENTS	20	6:00
3.4.A	REAR SUSPENSION SYSTEMS	21	3:45
3.4.B	REAR WHEEL TRACKING	27	4:30
3.6	SUSPENSION HEIGHT	15	3:15

TOTAL: NO. FRAMES 155/TIME 34:08 MIN.

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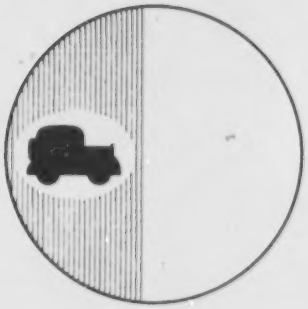
COMPONENT REMOVAL AND REPLACEMENT

9 MODULES. HOFFMAN
(32-1708)

		FRAMES	TIME
3.3.B	REMOVAL AND REPLACEMENT - COIL SPRING	31	6:30
3.3.C	REMOVAL AND REPLACEMENT - TORSION BAR	22	3:30
3.3.D	REMOVAL AND REPLACEMENT - SHOCK ABSORBER	25	4:45
3.7.A	BALL JOINTS - THEORY	18	3:50
3.7.B	BALL JOINTS - REMOVAL	17	3:35
3.7.C	BALL JOINTS - RIVETED AND BOLTED	16	3:20
3.7.D	BALL JOINTS - THREADED AND PRESSED IN	23	5:35
3.7.E	TIE ROD END REPLACEMENT	15	2:45
3.7.F	KING PIN REPLACEMENT	23	5:00



AUTO BODY REPAIR AND PAINT

CARROSSERIE ET PEINTURE

AUTOBODY

Auto Body and Fender Repairman

SECOND EDITION, 1972. STUDY GUIDE AND ASSIGNMENT TESTS. INDUSTRIAL EDUCATION PUBLICATIONS
.....$5.50
ANSWER BOOK.....$2.50

Assignments cover properties of metals, tools and equipment, welding, plastic fillers and procedures for straightening sheet metal and body frames. Of the 55 assignments, 4 are based on Richert, How to Control Auto Body Sheet Metal, 1968, Chilton. The next 51 assignments are based on Sargent, Automobile Sheet Metal Repair, 2d. ed., 1969, Chilton.

* * * *

Auto Body Repair and Refinishing

JOHN W. HOGG. 1969, 274PP. MCGRAW-HILL RYERSON (94924-7).....$13.25

This text is designed for all introductory courses in auto body work. It gives the students a thorough grounding in automobile construction, tools of the trade, welding and soldering before it introduces them to practical situations. Each chapter contains all the information required to effect the repair.

AUTOBODY

CONTENTS: Construction of the Automobile; Hand Tools; Fasteners; Welding; Sheet-Metal Damage Repair Procedures; Soldering; Expansion; Contraction; Heat Distortion and Shrinking and Fitting Methods; Frame-Straightening Techniques; Suspension Systems; Steering Principles; Plastic Fillers and Fibre-Glass Repairs; Panel-Forming Techniques; Automotive Electricity; Refinishing Materials; Surface Preparation; Spray Equipment; Spray-Gun Techniques; Exterior and interior Cleaning; Index.

* * * *

AUTO BODY REPAIR FOR THE DO-IT-YOURSELFER

AUDEL TECHNICAL BOOKS. 1976. 80 PP. 8½ X 11. PAPER
THOMAS ALLEN AND SON
(23238).....$7.25

This book shows the do-it-yourself car owner how to do his own auto body work. It shows in easy, detailed procedures how to use touch-up paint, repair, scratches and dents; remove and prevent rust; care for glass, doors, locks, lids, and vinyl tops; and clean and repair upholstery. Many photos lead the reader through each process.

* * * *

AUTO BODY REPAIRING AND REPAINTING

B. TOBOLDT. 232PP. 400 ILLUS. GENERAL PUBLISHING
.....$7.50

This book covers all phases of body repairing - use of modern tools & equipment, step by step procedure of handling typical jobs. Covers new finishes. Includes chapter on customizing and building bodies.

AUTO BODY REPAIRING AND REPAINTING

BILL TOBOLDT. 224PP. BRODHEAD-GARRETT
(350866).....$6.40

This book helps students qualify for jobs with good pay, in this fast growing branch of automotive service.

* * * *

AUTOMOTIVE BODY REPAIRMAN

1973. OCCUPATIONAL REPRINTS. CHRONICLE GUIDANCE PUBLICATIONS.
(96).....50 CENTS.

* * * *

AUTOMOTIVE CHASSIS AND BODY, FIFTH EDITION

WM. H. CROUSE AND D.ANGLIN. 1976. 416 PP.
MCGRAW-HILL RYERSON
(14653-5).....IN PRESS
(14654-3) WORKBOOK.....IN PRESS
TRANSPARENCIES
AUTOMOTIVE BRAKES. 1971
(14673-X).....$93.50 NET.
AUTOMOTIVE STEERING SYSTEMS, 1971
(14674-8).....$93.50 NET.
AUTOMOTIVE SUSPENSION SYSTEMS, 1972
(14675-6).....$93.50 NET

The latest developments in automotive chassis and servicing are reviewed in this new edition. Featured are facts about energy absorbing bumpers, reinforced side bars in doors, seat-belt systems, non-lubricating steering linkage joints, new disk brake design, anti-skid controls. MacPherson suspensions, radial tires and new shock absorbers.
CONTENTS: Fundamental Principles; Automotive Chassis Fundamentals; Automotive Springs & Suspension;

Shock Absorbers; Steering Systems; Diagnosing Steering & Suspension Troubles; Servicing Steering Linkage & Front & Rear Suspension; Front-End Alignment; Manual Steering Gear Service; Saginaw Rotary-Valve Power-Steering Service; Chrysler Constant Control Power-Steering Service; Ford Power-Steering Service; Linkage-Type Power-Steering Service; Automotive Brakes; Brake Service; Power-Brake Service; Tires and Service; Chassis Lubrication; Car Frame and Body; Air Conditioning; Servicing Air Conditioners.

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AUTOMOTIVE COLLISION APPRAISAL
ROBT. MACPHERSON. 1975. 288PP. MCGRAW-HILL RYERSON
(44695).....$8.75
INSTRUCTOR'S PACKAGE (INSTRUCTOR'S MANUAL, 80 -35 MM. COLOR SLIDES)
(79374-3).....$71.50 NET.
INSTRUCTOR'S MANUAL
(44696-2).....$ 3.30 NET.

This is a complete authoritative text-workbook on evaluating automotive body casualty damage. As one reviewer wrote: "The text is sound in its content and would be of great value in teaching collision appraisal". It is a practical introduction to automotive collision appraisal for both present and future collision repair shop supervisors and for automotive insurance appraisers and property damage adjusters.
CONTENTS: Understanding Collision Damage; Fundamentals of Damage Appraisal; Repair Procedures and Techniques; Accident Investigation.

AUTOMOTIVE COLLISION WORK, FOURTH EDITION
E. SPICER. 429PP. 408 ILLUS. GENERAL PUBLISHING
ATS.....$10.00

This edition covers collision work in all its aspects. The book leads step-by-step through basic concepts of frame and body construction, tools, types of welding, repair of doors, hoods, deck lids and frame alignment. It also includes: unitized body, new materials - plastics, wood grain finishes and the latest tools.

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AUTOMOTIVE REFINISHING (AUTOMOTIVE REFINISHER)
SECOND EDITION, 1971. STUDY MANUAL, REFERENCES AND ASSIGNMENTS TESTS. INDUSTRIAL EDUCATION
.....$9.95
ANSWER BOOK.....$2.50

A comprehensive study based on Automotive Refinishing by du Pont and Ditzler Repair Manual. References are furnished in the set; 33 assignments.

* * * *

BASIC BODYWORK AND PAINTING NO. 4
PETERSEN ACTION LIBRARY. GENERAL PUBLISHING
(2223 630).....$3.50

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CAR BODY REPAIR AND MAINTENANCE
HAMLYN PUBLISHING GROUP
.....$3.95

All the motorist wants to know about the preservation repair and improvement of his car's bodywork.

AUTOBODY

This handbook shows how the owner can maintain the exterior and interior of his car in first-class condition through years of service and carry out minor repairs. It is valuable to the enthusiast who intends to renovate the body of an old vehicle or add the personal touch to a new one by fitting extra embellishments. Retouching and refinishing paintwork is described, and other subjects include repairing minor damage, replacing corroded metal, repairs & adjustments to door and window gear, curing leaks, upholstery and trim repairs, undersealing and maintaining a sparkling finish.

* * * *

Collision Repair Guide

ROBERT MACPHERSON. 1971. 278 PP. FISHER BODY DIV. GENERAL MOTORS CORP. MCGRAW-HILL RYERSON
(44690-3).....$7.15
INSTRUCTOR'S MANUAL
(44691-1).....$1.65 NET.
STUDENT NOTE BOOK. 64 PP.
(44693-8).....$2.50
INSTRUCTOR'S KIT, MANUAL, 80-35MM. SLIDES, COLOUR.
(79615-7).....$38.50 NET.

This program is a detailed guide to collision repair designed to prepare students for employment in quality body repair shops. A comprehensive multi-media system, it includes a textbook, student notebook, 80-35mm. color slides and an instructor's manual. Students learn to analyze the job and develop repair skills. Major topics include use of a torch to remove dents, shrinking, use of chains to straighten damage, underbody checking and door alignment. Estimating, applying plastics, solder plates and wind noise correction are also covered. An Instructor's Kit, containing all course material plus a set of 80 slides, is available for preview.

* * * *

Fiber Glass Plastic

32PP. 83 ILLUS. TWO COLORS, 8½ X 11 INCH SIZE WITH SOFT COVER. FOS. JOHN DEERE
(FOS-598).....$2.35
10 OR MORE.....$1.75 EACH

This is a concise guide to repair of fiber glass damage. It starts with nature of fiber glass, types of damage, tools for repair. Detailed procedures for repair of cosmetic damage and structural damage. Over 80 photos show actual repair steps and use of kits and materials.
CONTENTS: Nature of Fiber Glass; Materials and Processes; Tools, Materials for Repair; Safety Precautions; Types of Damage; Repairing Cosmetic Damage; Scratches and Gouges; Repairing Structural Damage; Procedures for Hairline Cracks, Small, Large Fractures, and Puncture Repair.

* * * *

Principles of Autobody Repairing and Repainting

TAIT- DEROCHE- HILDEBRAND. 530PP. 1971. PRENTICE-HALL
(013-705640-9).....$13.50

Features complete coverage of all aspects of autobody repairing and refinishing, detailed and specific instructions for carrying out procedures and over 700 illustrations. Teacher's Manual Available. This Manual contains tips on how to teach the course, as well as answers to the questions.
CONTENTS: Details of Body Construction; Fastenings, Devices, Mouldings and Clips; Welding, Repairing Damaged Panels and Metal Working Methods; Hydraulic

Equipment; Shrinking; Abrasives and Power Tools; Filling Dents with Body Solder; Plastic Filler and its Uses. Fibre-glass and Methods of Using; Frame Alignment; Adjustments; Removing and Replacement of Upholstery Trim and Headlingings; Recovering and Repairing Convertible and Vinyl Tops; Replacement of Glass & Weatherstripping; Repairing Turret-Top Damage; Repairing Rear-End Collision Damage.

* * * *

TOTAL AUTO BODY REPAIR

L. RHONE, MACARTHUR STATE TECH. COLLEGE. 8½ X 11. 496 PP. HARDBOUND. A.C. SIMMONDS
(ISBN: 0-672-21031-2).....

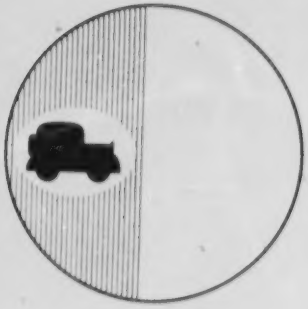
This book covers all areas of auto body repair. Topics range from the work of a beginning body man to that of a body shop manager. Specific information is offered on all phases of this career field. Information is included on types of training, all technical operations of complete body repair work, job advancement, body shop management, shop location, estimating and insurance work. The book's style is ideal for use in high school body repair courses, vocational schools & technical college courses. Can also be used for self-study. Each section and unit stands alone for quick reference. One may read about a single topic without the necessity of reading other units. Designed to give practice in all phases of repair skills. It is arranged so that experiences are built from simple to complex operations. Over 1000 pictures are used to illustrate the written material explained.
CONTENTS: Body Shop Business; Hand and Power Tools; Body Fillers, Abrasives and Sealers; Oxy-Acetylene Heating, Brazing, Heat-Shrinking, Welding; Arc Welding; Auto Body Construction; Bumpers; Frame and Body Alignment; Metal Straightening and Aligning; Glass and Trim Work; Rust Damage; Automotive Paint Products; Preparing for Painting; Applying Paint; Paint Rub-Out and Restoration.

* * * *

WORKBOOK FOR AUTOMOTIVE CHASSIS AND BODY

WM. CROUSE AND D. ANGLIN. 1976. 96 PP. MCGRAW-HILL RYERSON
(14654-3).....IN PRESS

Correlated with Automotive Chassis and Body, Fifth Edition, this workbook is a combination shop guide, study guide, notebook, and work-progress report that your students use for every chassis-related job. As each job is assigned, the workbook presents the objective, text references, information about equipment, tools, safety, and step-by-step procedures. At the end of each job a test is administered to check student progress.
CONTENTS: Front and Rear Suspension Systems; Shock Absorber Operation & Service; Automatic Level Control Steering Systems; Front-End Geometry; Manual Steering and Power Steering Gears; Diagnosing Troubles in Springs & Shock Absorbers, and in Steering & Front Suspension Systems; Servicing Steering Linkages & Front Suspension Systems; Balancing Wheels & Checking Runout; Front-End Alignment Checks & Adjustments Manual Steering & Power Steering Gear Service; Rear Suspension Service; Construction & Operation of Brake Systems and Power Brakes; Antiskid Systems; Diagnosing Brake Troubles; Adjusting Drum-Type Self-Adjusting Brakes; Servicing Wheel & Master Cylinders Disk Brake Service; Flushing, Filling & Bleeding Hydraulic Brake System; Tire Service; Tire and Tube Repair; Chassis Lubrication; Air Conditioner Performance Test; Charging Air Conditioner.



AUTO BODY REPAIR AND PAINT

CARROSSERIE ET PEINTURE

AUTOBODY REPAIR

Auto Body Repair and Painting

OVERHEAD TRANSPARENCIES. MEDEX
COMPLETE SET.....$145.00

This set consists of notes, 42 multi-coloured transparencies with 13 overlays. DCA transparencies are made by the silk screen process and are tri-sensitized so that the ink penetrates right into the plastic. The transparencies are hard to scratch and will never wear out or wash out. Many transparencies have overlays and come in up to eleven colors. The price depends on the number of overlays and number of colors used. All transparencies are of heavy plastic with a plastic frame.

Auto Mechanics

SUPER 8 COLOR FILMLOOPS. MEDEX

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Body Construction - Group I

FILMSTRIPS. MEDEX
AB01 AUTO BODY PARTS.....$4.25
AB02 EXTERNAL MOLDING ARRANGEMENTS.....$4.25
AB03 MODLING ATTACHMENTS.....$2.85
AB04 FRONT END SHEET METAL.....$4.25
COMPLETE SET.....$15.50

Tools - Group II

AB05 HAND TOOLS FOR AUTO BODY REPAIRS - 1.$4.25
AB06 HAND TOOLS FOR AUTO BODY REPAIRS - 2.$4.25
AB07 POWER TOOLS.....$2.85
AB08 POWER SANDING.....$2.85
AB09 OPERATING A DISK SANDER.....$3.45
AB10 SPECIAL TOOLS.....$2.25
COMPLETE SET.....$19.50

Body Repairs and Alignment - Group III

AB11 REMOVING BODY DENTS.....$4.85
AB12 FILING AND PICKING.....$3.45
AB13 REMOVING A SIMPLE ROLLED BUCKLE AND SHRINKING..$3.45
AB14 CHECKING BODY FOR ALIGNMENT.....$2.85
AB15 USING A PULLDOZER JACK FOR STRAIGHTENING.....$3.45
AB16 USING HYDRAULIC JACKS FOR STRAIGHTENING.....$2.85
AB17 REMOVING AND REPLACING GLASS.....$2.85
AB18 REMOVING MINOR SCRATCHES FROM....$2.85
COMPLETE SET $26.25

Metal Preparation - Group IV

AB19 REPLACEMENT PANELS.....$4.25
AB20 CORRECTING FENDER DAMAGE.....$2.85
AB21 APPLYING BODY SOLDER.....$2.85
AB22 APPLYING PLASTIC FILLER.....$2.85
AB23 ABRASIVE GRITS.....$2.85
COMPLETE SET.....$15.35

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Fiber Glass Plastics

SLIDE SET: MATCHING 35MM. COLOR SLIDE SET
80 COLOR SLIDES IN STANDARD 2X2 FRAMES. FOS
(FOS-59).....$29.65

This set is available to reinforce "Fiber Glass" text in classroom or study carrel.

AUTOBODY REPAIR

YOUR GUIDE TO PROFIT

GUY CHART
.....$2.50

This manual contains fifty pages of hook-up for straightening cars.

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PLYMOUTH REPAIR SEQUENCE

SLIDES AND SCRIPT. GUY CHART
(707200).....$98.50
INSTRUCTION MANUAL DDC GAUGE.....$ 1.50

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CUSTOM 40,000 SYSTEM

GUY CHART
(101025 A).....

All accessories are mounted on 22" x 30" steel peg boards which shows silhouettes and product numbers. Missing tools are obvious at a glance. Newly designed finger hooks are now included in the system. When added to the other clamps you have extremely fast effective hook-ups for every situation. Guy-Chart anchor pots enhance tie-down speed still further. The Guy-Chart gauging system includes the DDC frame gauges, axle stands, and tram gauge.

THE DDC FRAME INSTRUCTION KIT

GUY CHART
.....$700.00

THE COMPONENTS OF THIS KIT ARE:
DDC MINI-FRAME
(110108)

This is the Key to the Kit. Only ¼ the size of the standard car frame, it can be mounted on a table or moved anywhere for demonstrating purposes. Since there are no overhanging body sections, your students can see exactly what is happening to the frame. Despite its small size, you can duplicate any frame damage quickly and easily by just making a few "twist of the wrist" adjustments.

DDC FRAME GAUGE KIT ON INSTRUCTION BOARD
(101080)

These gauges will pinpoint direct and indirect misalignment conditions as well as perfect alignment. The DDC FRAME GAUGES are full sized gauges which can be used either on the MINI-FRAME or on conventional car and truck frame.

DDC GAUGE OPERATING MANUAL
(702000)

This contains complete operating instructions on the use of the gauges.

DIMENSION CHART
(703400)

This gives the dimensions of the MINI-FRAME. It is equivalent to a page from a commonly used manufacturer's specification book.

AUTOBODY REPAIR

MINI-TRAM
(110109)

A Tram Gauge is used to take measurements over objects such as the engine or for measuring length. While designed to work with the MINI-FRAME, the MINI-TRAM can be expanded for use on full sized cars.

The DDC Instruction Frame Kit makes it easy for the instructor to show his students how to verify for damage and how to establish the steps to be taken to make repairs. Such damage is, of course, directly related to wheel alignment problems. As a project, the instructor can misalign the MINI-FRAME, then require the students to use the gauges and specification sheet to bring it back to manufacturers specifications. The student will easily relate this knowledge to full sized cars.

Note: In addition to the above, this company conducts regular monthly training sessions for updateing auto body repair technicians. The registration fee is $75.00

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PAINT

PAINT - COLOR MATCHING METALLICS

STUDENT REFERENCE BOOK. FORD
(4651-002).....$3.70

Describes techniques for matching color of repair paint to original metallic finish.

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PAINT - ACRYLIC LACQUER REPAIRS ON ENAMEL FINISHES

FILMSTRIP AND RECORD. FORD
(4651-003).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Describes techniques for spot repairing acrylic enamel finishes with acrylic lacquers.

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PAINT REPAIR

STUDENT REFERENCE BOOK. FORD
(4651-010).....$4.80

Covers all phases and techniques of paint repair including equipment, materials, spraying techniques, surface preparation, prime and finish coats, spot repair, wood grain transfer film repair, etc.

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FIBERGLASS BODY REPAIR

FILMSTRIP AND RECORD. FORD
(4653-001).....$9.95
STUDENT REFERENCE BOOK.....$3.25

Discusses materials, tools, safety precautions and techniques for all types of automotive body fiberglass repair.

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PAINT

Spray Guns and Systems - Group V

FILMSTRIPS. MEDEX

AB24 THE SPRAY GUN.....$6.35
AB25 CLEANING THE SPRAY GUN.....$2.85
AB26 COMMON SPRAY GUN TROUBLES.....$4.25
AB27 COMPLETE SPRAYING SYSTEMS.....$3.45
AB28 AIR COMPRESSOR AND TRANSFORMER..$5.50
AB29 AIR PRESSURE DROP TABLE.....$2.85

Masking and Painting - Group VI

FILMSTRIPS. MEDEX

AB30 MASKING WINDSHIELD AND HEAD LAMPS $3.45
AB31 MASKING WINDOWS, CURVED EDGES AND PANELS.....$3.45
AB32 MASKING WHEELS, TRIM, DOOR HANDLES, EMBLEMS.....$3.45
AB33 MASKING FRONT END.....$3.45
COMPLETE SET.....$44.50

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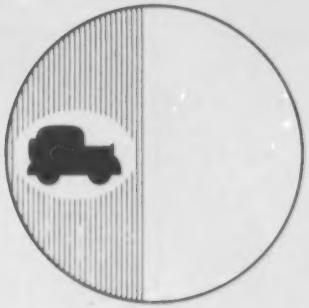

SPECIFIC MODEL MAINTENANCE AND RELATED CAREERS

ENTRETIEN DE MODÈLES PARTICULIERS ET CARRIÈRES CONNEXES

MAINTENANCE

AUDEL MINI GUIDE CAN-DO TUNE-UP SERIES

AUDEL TECHNICAL BOOKS. 112 PP. 5½ X 8½. PAPER
THOMAS ALLEN AND SON

(23824)	GENERAL MOTORS CARS	1975
(23825)	CHRYSLER MOTORS CARS	1975
(23827)	FORD MOTOR CARS	1975
(23826)	VOLKSWAGEN CARS	1975
(23831)	PINTO & VEGA	1975
(23835)	TOYOTA & DATSUN	1975
(23843)	AMERICAN MOTOR CARS	1976

.....$10.95 EACH

This series consists of a soft cover book with easy to follow instructions, diagrams, charts and photographs, plus a tape cassette that guides you through each procedure. No mechanical background necessary or special tools needed. Covers electrical fuel, cooling systems and much more.

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MAINTENANCE

CAN-DO-TUNE-UP SERIES
112PP. 5½ X 8½. SOFTBOUND. A.C. SIMMONDS
(23825).....$9.95

Chrysler Corporation Cars. Each book in this series comes with an audio tape cassette. Together they provide an organized set of instructions that will show you and take you through the variations and bune-up procedures designed for your particular car. The books contain illustrated detailed instructions; the audio cassette gives an overview of the steps to be performed and gives hints, tips, and techniques to use while performing each job. An extra troubleshooting section presents an easy-to-follow guide to check the electrical, fuel, fuel air, lubrication and cooling system.

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CAN-DO-TUNE-UP SERIES CONT'D
112PP. 5½ X 8½. SOFTBOUND. A.C. SIMMONDS
(23827) FORD MOTOR COMPANY CARS.....$9.95
(23824) GENERAL MOTORS CORPORATION CARS.....$9.95
(23826) VOLKSWAGEN CARS.....$9.95
(23831) PINTO AND VEGA.....$9.95
(23835) TOYOTA AND DATSUN.....$9.95
(23834) AMERICAN MOTORS CORPORATION CARS....$9.95

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CAR MODEL YEAR & ENGINE IDENTIFICATION MANUAL
24 PP. A.S.I.A. PUBLICATIONS
(513).....$1.00

Illustrations assist in identifying vehicle make, model and year from 1967 - 1976 of American and foreign cars and light trucks. The book explains engine identification code marks and where to find them.

CAN-DO TUNE-UP
HOWARD W. SAMS.AND CO. INC.
GENERAL MOTORS CORPORATION CARS
(23824).....$9.95
CHRYSLER CORPORATION CARS
(23825).....$9.95
VOLKSWAGEN CARS
(23826).....$9.95
FORD MOTOR COMPANY CARS
(23827).....$9.95
PINTO AND VEGA
(23831).....$9.95
TOYOTA AND DATSUN
(23835).....$9.95
FOREIGN AUTO REPAIR MANUAL
(23078).....$7.25

Can-Do-Tune Up.

* * * *

FIX YOUR FORD
B. TOBOLDT. 400PP. ILLUS. ALL MODELS - 1966-1975
GENERAL PUBLISHING CO.
.....$5.75

A handbook of time and money-saving information for owners and mechanics interested in Ford & Pinto cars. Describes simplified tune-up procedures; tells how to locate trouble and make many adjustments and repairs. Based on material from Ford mechanics and Ford Motor Co. and equipment manufacturers.

* * * *

MAINTENANCE

FIX YOUR CHEVROLET
B. TOBOLDT. 368PP. ILLUS. ALL MODELS 1966-1975
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* * * *

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PAUL DEMPSEY. 350PP. 265 ILLUS. 1976. PAPER.
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* * * *

THE TESTING OF INTERNAL COMBUSTION ENGINES
A.B. GREENE AND G.G. LUCAS. 176PP. 215 X140MM.
LINE AND HALF-TONE ILLUS. 1969.
READERSHIP: HNC/HND DEGREE. HODDER AND STOUGHTON.
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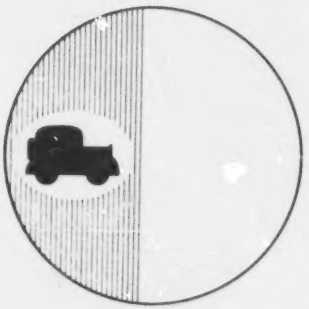

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CHAPTER VII
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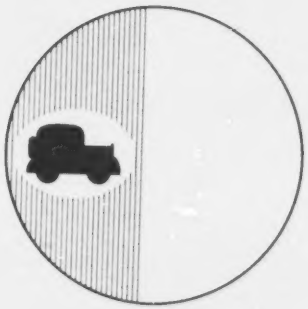

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Automotive Mechanics Occupational Performance Survey

Centre For Vocational Education, Ohio State Publications Catalogue. 1960 Kenny Rd. Columbus, Ohio.

Interim Report by Sidney Borcher and Paul Leiter. Presents the results of the Task Inventory Analysis Survey in the "A.M.O." area for use on revising and designing vocational - technical programs for automotive mechanics.1973. 62pp.
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Centre For Vocational Education, Ohio State Publication Catalogue, 1960 Kenny Rd. Columbus, Ohio

Supplement 1. - compiled by C. Cotrell and I. Valentine. Provides instructional materials for use by participants and institute staff for conducting future state and locally sponsored Leadership Training. 1967. 185pp.
(LT12).....$12.00

Supplement 2. 1967. 217pp.
(LT13).....$14.00

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Educational Media in Vocational & Technical Education

Centre for Vocational Education, Publication Catalogue, pp. 57. Ohio State University, Columbus, Ohio.

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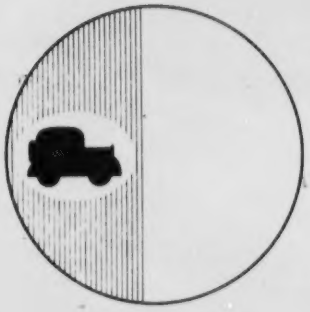

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